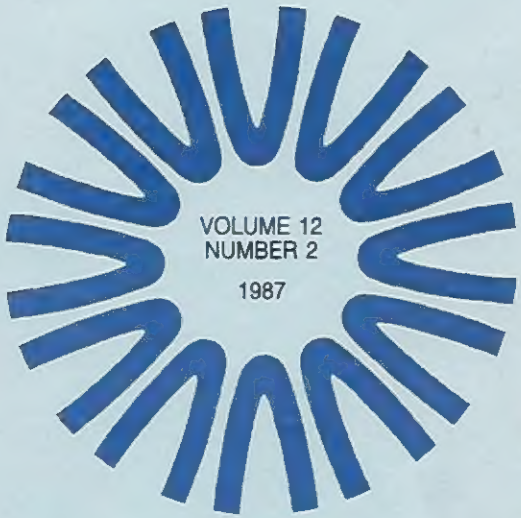
THE EXPANDED USE OF SPACE ACT AUTHORITY TO ACCELERATE SPACE COMMERCIALIZATION THROUGH ADVANCED JOINT ENTERPRISES BETWEEN FEDERAL AND NON-FEDERAL CONSTITUENCIES



J. HENRY GLAZER, S.J.D.

Reprinted from
RUTGERS COMPUTER AND TECHNOLOGY LAW JOURNAL
Volume 12, No. 2

THE EXPANDED USE OF SPACE ACT AUTHORITY TO ACCELERATE SPACE COMMERCIALIZATION THROUGH ADVANCED JOINT ENTERPRISES BETWEEN FEDERAL AND NON-FEDERAL CONSTITUENCIES

J. HENRY GLAZER, S.J.D.*

Irrespective of contrary policies, managerial preferences, or pre-positioned bureaucratic frameworks, R&D organization and management must of needs be 'organic'—flexible, decentralized, informal, *ad hoc*, and oriented to facilitating problem-solving more than the performance of prescribed work routines.[1]

I. INTRODUCTION

The signals from orbit of the Soviet Union's Sputnik I were also the clarion call for an alarmed, and outraged, 85th Congress to engage in convulsive law-making. In the "propwash" of hearings and legislation that ensued, the former National Advisory Committee for Aeronautics ("NACA") tailspinned into history, replaced, on July 29, 1958, by the National Aeronautics and Space Administration ("NASA").[2] Now absent from the federal scene, that sunburst of congressional enthusiam

* Member of the California and District of Columbia Bars and of White's Inn, San Francisco, California. Assistant Professor for Space Law and Astrolaw at the University of California's Hastings College of the Law. The College is a participating institution in the NASA-Ames/University Consortium, the subject of a Space Act Agreement specifically referenced in this study. Grateful acknowledgment is extended to Ms. Toneata L. Ortega, a Hastings law student, who assisted the author in locating source materials.

1. Hunt, *Cross Purposes in the Federal Contract Procurement System: Military R & D and Beyond*, 44 PUB. ADMIN. REV. 247, 250 (1984).

2. Established March 3, 1915 under a Naval appropriations act, the former National Advisory Committee for Aeronautics was organized as an independent agency of government tasked with supervising and directing the scientific study of the problems of flight. Under section 301 of the National Aeronautics and Space Act of 1958, Pub. L. No. 85-568, 72 Stat. 426 (codified as amended at 42 U.S.C. §§ 2451-2484 (1982 & Supp. III 1985)) [hereinafter Space Act], NACA ceased to exist on the effective date of that section when all functions, powers, duties, personnel, and obligations, together with all property including three aeronautical laboratories (Langley in Virginia, Lewis in Ohio, and Ames in California), were transferred to the National Aeronautics and Space Administration ("NASA"). Like its predecessor, NASA is an independent agency of government, under civilian control, and not a part of the Department of Defense. The statutory dichotomy between NASA and the Department of Defense is established in section 102(b) of the Space Act, codified at 42 U.S.C. § 2451(b) (1982).

for the new agency was palpably reflected in unusual grants of authority conferred upon NASA under far-reaching provisions of the National Aeronautics and Space Act of 1958 ("Space Act").[3] Like various departments and agencies in the Executive Branch of Government, NASA was also invested with conventional authority under the new Act to enter into and perform contracts,[4] to award grants,[5] to appoint officers and employees in the civil service,[6] and to hire experts and consultants.[7] These substantive provisions of the Space Act were implemented by the procedural requirements of the Armed Services Procurement Act,[8] the Federal Property and Administrative Services Act,[9] Grant Statutes,[10] and a welter of federal personnel laws. Each of

3. *See supra* note 2.

4. Certain provisions of subsection 203(c)(5) of the Space Act, codified as amended at 42 U.S.C. § 2473(c)(5) (1982), furnish substantive authority for NASA to "enter into and perform contracts . . . ," while others, in the same subsection, furnish a part of the substantive authority for NASA to elaborate Space Act Agreements. *See infra* notes 31 & 34. The substantive authority regarding *contracts*, but not Space Act agreements, is implemented by the procedural requirements contained in chapter 137 of the Armed Services Procurement Act, codified as amended at 10 U.S.C. §§ 2301-2316 (1982); the Federal Property and Administrative Services Act of 1949, codified as amended at 40 U.S.C. §§ 471-514 (1982); and a number of other government-wide statutes affecting the procurement process. *See infra* notes 5, 11, 32 & 52.

5. Enacted shortly after the Space Act, the Grant Act of 1958, Pub. L. No. 85-934, 72 Stat. 1793 (1958) [hereinafter 1958 Grant Act], a statute of government-wide application, authorized heads of federal agencies, otherwise empowered to enter into contracts for basic scientific research with certain nonprofit entities including universities, to make grants, as well, for the support of scientific research at those places. The 1958 Grant Act was repealed by section 10(a) of the Federal Grant and Cooperative Agreement Act of 1977, Pub. L. No. 95-224, 92 Stat. 3 (1978) (codified at 41 U.S.C. §§ 501-509 (1982)), which itself was amended by Pub. L. No. 97-258, 96 Stat. 1003 (1982) (codified at 31 U.S.C. §§ 6301-6308 (1982)) [hereinafter 1977 Grant and Cooperative Act].

6. Subsection 203(c)(2) of the Space Act, codified as amended at 42 U.S.C. § 2473(c)(2) (1982), provides the substantive authority for NASA to appoint and fix the compensation for officers and employees in the federal civil service. The reconciliation of this authority with the authority in subsection 203(c)(5) of the Space Act empowering NASA to procure by contract services otherwise performed by those in the civil service was the central issue in Lodge 1858, AFGE v. Webb, 580 F.2d 496 (D.C. Cir.), *cert. denied*, 439 U.S. 927 (1978). *See infra* note 13; *see also infra* notes 63-70 and accompanying text.

7. Subsection 203(c)(9) of the Space Act, codified as amended at 42 U.S.C. § 2473(c)(9) (1982), provides the substantive authority for NASA to obtain the services of experts and consultants. When hired, these persons are not deemed to be independent contractors but rather are assimilated to the status of "special government employees," appointed through the personnel precincts of NASA and, as such, subject to some of the laws, such as those governing conflict of interest, applicable to persons in the federal civil service.

8. 10 U.S.C. §§ 2301-2316 (1982). The Act is specifically applicable to the military departments and to NASA. *See id.* at § 2303(a)(1-5).

9. *See supra* note 4.

10. *See supra* note 5.

these acts, statutes, and laws was amplified, and refined, in turn by a myriad of federal regulations administered by congeries of procurement,[11] grant,[12] and personnel specialists both within, and outside of, NASA.

In addition to and entirely distinct from the conventional powers described, however, Congress, through companion provisions of the Space Act, allocated to NASA unusual shares of authority not otherwise conferred upon agencies in the Executive Branch.[13] Applied either separately, together, or in conjunction with other authority in the Space

11. Only two out of a number of procurement statutes, the Armed Services Procurement Act, *supra* notes 4 & 8, and the Federal Property and Administrative Services Act, *supra* note 4, have alone generated some 877 sets of procurement regulations containing a total of 64,000 pages applicable throughout Government. Effective April 1, 1984, a new Federal Acquisition Regulation revised, and consolidated, all separate agency procurement regulations into a single Federal Acquisition Regulation ("FAR") applicable to all departments and agencies and purportedly designed to simplify government-wide acquisitions of goods and services. But it hardly seems plausible that the FAR will eliminate the burdensome mass, and wasteland, of federal procurement regulations, particularly when the FAR fails to prohibit government agencies from issuing regulations that are unnecessarily repetitious. *See* Hatch, *The New Federal Acquisition Regulation: An Improvement?*, 56 N.Y. ST. B.J., Oct. 1984, at 13, 14. *See also* Hiestand & Williamson, *The New Federal Procurement System: Is Anyone in Charge?*, 17 U.C.C. L.J. 355 (1985).

12. Vast unfilled chasms weave through grant statutes, leaving major areas of the grant without direction. The statutes themselves, sloppily written, grandiosely debated, and invariably underfunded, manage to generate some 112,000 primary grant agreements yearly. Hundreds of thousands of subgrants are later awarded at an annual cost of eighty-five billion dollars throughout the government. The grant has become such a massively complex legal relationship that "illegality" is common, understandable, and even accepted. *See* Cappalli, *Federal Grants and the New Statutory Tort: State and Local Officials Beware!*, 12 URB. LAW. 445 (1980). These comments and criticisms have limited application to NASA, but rather apply to other agencies which, prior to enactment of the 1977 Grant and Cooperative Act, *supra* note 5, used grants, unlike NASA, largely to support "assistance relationships" with recipients. In classifying procurement contracts, grant agreements, and cooperative agreements, the cardinal purpose of the 1977 Grant and Cooperative Act was to distinguish "assistance" from "procurement" by restricting the term "contract" to procurement relationships and by requiring the use of the other two instruments, "grant agreements" and "cooperative agreements," to implement assistance relationships. *See* R. CAPPALLI, FEDERAL GRANTS AND COOPERATIVE AGREEMENTS: LAW, POLICY, AND PRACTICES § 1:27 (1982). Unlike other agencies of government, however, NASA does not generally award grants or cooperative agreements for assistance purposes, but only to meet program objectives; hence consideration of any potential benefit accruing to the recipient is extraneous to determining the type of support instrument NASA will use. *See* NASA GRANT AND COOPERATIVE AGREEMENT HANDBOOK INSTRUCTIONS para. 203.2 (Dec. 31, 1984), 14 C.F.R. § 1260.203(b) (1986) [hereinafter NASA HANDBOOK].

13. The unique features of NASA's Enabling Act are implicit in the statement by the United States Court of Appeals for the District of Columbia Circuit: "Our concern is not the Executive Branch generally but NASA specifically and that necessarily involves any specific authority conferred on NASA that is not conferred generally in the Executive Branch." *Lodge 1858*, 580 F.2d at 503 n.21.

Act[14] or even other acts of Congress,[15] and sometimes state law,[16] the substantive provisions contained in subsection 203(c)(4),[17] certain segments of subsection 203(c)(5),[18] and all of subsection 203(c)(6)[19] of the Space Act empower NASA to elaborate agreements of novel impression

14. For example, the authority "to establish within the Administration such offices and procedures as may be appropriate to provide for the greatest possible coordination of its activities . . . with related scientific and other activities being carried on by other public and private agencies and organizations." 42 U.S.C. § 2473(c)(8) (1982). *See* Myers, Cooperative Agreements with NASA for Space Business Activities (1984) (unpublished paper presented at the Third Annual Space Development Conference, San Francisco, Apr. 22, 1984). The Act also confers the authority to allocate "such contracts, leases, cooperative agreements, or *other transactions* . . . in a manner which will enable small business concerns to participate . . . in . . . the work of the Administration," 42 U.S.C. § 2473(c)(5) (1982) (emphasis added); the authority under the foreign policy guidance of the President [to] "engage in a program of international cooperation in work done pursuant to this . . . [Act], and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate," 42 U.S.C. § 2475 (1982). In addition, other provisions of the Space Act mandate *inter alia* as a matter of congressional policy that NASA participate with the scientific community, 42 U.S.C. § 2473(a)(2) (1982); widely disseminate information concerning its activities, 42 U.S.C. § 2473(a)(3) (1982); and "encourage, to the maximum extent possible, the fullest commercial use of space," 42 U.S.C. § 2451(c) (Supp. III 1985).

15. For example, subsection 203(c)(6) of the Space Act, codified at 42 U.S.C. § 2473(c)(6) (1982), authorizes NASA to use the services, equipment, *personnel*, and facilities of other entities and, conversely, also authorizes NASA to cooperate with those entities in the use of NASA's services, equipment, and facilities, but not specifically the use of NASA's civil service personnel. The Intergovernmental Personnel Act, 5 U.S.C. §§ 3371-3375 (1982), a statute of government-wide application, however, specifically authorizes heads of Executive Agencies either to detail or to assign civil servants under their supervision to states, local governments, or institutions of higher learning. Consequently, if the entity involved is a university, then the authority set forth in subsection 203(c)(6), when interlocked in the same "Space Act Agreement" with the authority contained in the Intergovernmental Personnel Act, enhances the interchange of persons between NASA, on the one hand, and the university involved, on the other. The various Space Act Agreements discussed in this study interlock *in the same instrument* provisions in the Space Act with related, and at times more specific, provisions in other acts of Congress of government-wide application. The Enterprise Agreement, which is the focus of this study, illustrates this amalgamation of seemingly unrelated acts of Congress as furnishing in conjunction with provisions of the Space Act, the collective authority to enter into Space Act Agreements of far-reaching import.

16. Apart from the provisions of the Space Act, more specific authorities for the employment of students under Work-Study Programs sanctioned both by federal and state laws—as now set forth in 42 U.S.C. § 2751 (1985) and section 69950 of the California Education Code (Deering 1987) respectively—were relied upon by the NASA-Ames Research Center to obtain for employment at the Center student apprentices in the various trades. Since all such students were, by operation of federal and state law, deemed to be employees of the Community College Districts furnishing them to the Center, and not employees of the federal government, no problems arose when commingling these student apprentices with federal civil servants employed in the same shops. In this connection see *Lodge 1858*, 580 F.2d at 505.

17. *See infra* notes 20, 21 and accompanying text & 25.

18. *See infra* notes 20, 22 and accompanying text & 31.

19. *See infra* notes 20, 26, 27 and accompanying text & 29.

with an array of governmental entities; public and private entities of every nature, type, or description; non-profit and profit-making entities; other legal or natural persons; and, in categorical situations, foreign or overseas organizations and individuals. Implemented through concise and brief internal NASA regulations[20] without recourse to, or through minimal recourse to, procurement or personnel procdures and the anthill of government offices administering them, these agreements fall beyond the ambit of federal procurement statutes, grant statutes, or personnel laws by authorizing NASA, under subsection 203(c)

> (4) . . . to accept unconditional gifts or donations of services, money, or property, real, personal, or mixed, tangible or intangible;[21]
>
> (5) . . . to enter into and perform such contracts, leases, *cooperative agreements* or *other transactions* as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, Territory, or possession, or with any political subdivision thereof, or with any person, firm, association, corporation, or educational institution

---

20. For acceptance of unconditional gifts or donations, the NASA Regulations implementing subsection 203(c)(4), *see infra* text accompanying note 21, comprise one page of NASA Management Instruction ("NMI") No. 1210.1A (Sept. 20, 1974). For delegation of authority to take actions related to certain agreements with colleges and universities, the NASA Regulations implementing subsections 203(c)(5) and (6), *see infra* text accompanying notes 22 & 23, are contained in NMI No. 1050.3H (Dec. 17, 1980). For delegations of authority to take actions related to certain Space Act Agreements involving reimbursement to NASA, the Regulations implementing subsections 203(c)(5) and (6) are contained in NMI No. 1050.7 (July 12, 1984). For delegations of authority to take actions related to certain Space Act Agreements not involving reimbursement to NASA and for reserving the title "Joint Endeavor Agreement" exclusively for those requiring Shuttle launch services, the Regulations implementing subsections 203(c)(5) and (6) are contained in NMI No. 1050.6A (Dec. 17, 1984). For "Interagency Agreements" between NASA and other federal entities and delegations of authority concerning them, the NASA Regulations implementing subsection 203(c)(6) are contained in NMI No. 1050.1B (Sept. 22, 1970) and NASA Management Delegation ("NMD") No. A 1050.2A (Jan. 22, 1969, revalidated June 14, 1971). Apart from Space Act authority, the Economy Act of 1932, codified at 31 U.S.C. § 1535 (1982), also authorizes federal entities to transfer goods and services between them, but the Economy Act, unlike the Space Act, requires reimbursement in all instances.

21. NASA Regulations for acceptance of unconditional gifts or donations, *see supra* note 20, provide that the gift or donation must be offered without conditions, although the donor may request that the gift or donation be used in support of a NASA mission(s) or objective(s), but may not require the establishment of a *specific fund* therefor. Other federal agencies such as the National Oceanic and Atmospheric Administration ("NOAA") are also authorized by statute to accept donations of services. In fact, under 16 U.S.C. § 742(f) (1982), NOAA has made its research vessels available to train law student volunteers in maritime and astrolaw specialties. Donations of services or the non-reimbursable use of them by government under any statutory rubric can prove invaluable in carrying out missions and activities of federal agencies. The potential advantages of this authority, which in the writer's paradigm is incorporated within the quantum of NASA's authority to elaborate Space Act agreements, are little understood on the federal scene.

. . . ;[22]

(6) to use, with their consent, the services, equipment, personnel, and facilities of Federal and other agencies with or without reimbursement, and *on a similar basis* to *cooperate* with other public and private agencies and instrumentalities in the use of services, equipment, and facilities [of NASA]. . . .[23]

II. ANALYSIS OF SUBSECTIONS 203(C)(4) AND (C)(6)

In the treatment of the three components of the Space Act as described, subsection 203(c)(4) governing unconditional gifts or donations is rather overlooked by the commentators in studies focusing upon the full panoply of NASA's authority to elaborate Space Act Agreements.[24] Logically, however, subsection 203(c)(4) emerges as a part of that authority when compared with the plain language of subsection 203(c)(6) authorizing NASA to use with or without reimbursement the services, equipment, personnel, and facilities of federal and *other agencies* including private entities. For example, if NASA were to accept under (c)(4) authority an unconditional donation of services, or, as an alternative under (c)(6) authority, the use, without conditions and on a non-reimbursable basis, of services or personnel from the same individual or entity offering them under (c)(4) authority, the result would be entirely the same and attempts to strike logical, as opposed to legal, distinctions between the transactions would be tantamount to dividing a mustard seed.[25] Under either authority, NASA could, for example, cover the costs of travel and per diem expenses to a conference requiring at the behest of the Agency the attendance of the "donor of services" or, alternatively, the one furnishing without reimbursement the "use of services." While ordinarily (c)(4) authority is applied to natural persons and (c)(6) authority to legal persons, the legislative history supports application of either subsection to both natural and legal persons,

22. (Emphasis added). *See also infra* notes 31 & 34. The term "other transactions" appears again in remaining provisions as follows in subsection 203(c)(5):

> To the maximum extent practicable and consistent with the accomplishment of the purposes of this . . . [Act], such contracts, leases, agreements, and *other transactions* shall be allocated by the Administrator in a manner which will enable small-business concerns to participate equitably and proportionately in the conduct of the work of the Administration (emphasis added).

23. *See also infra* notes 26, 27 and accompanying text, 29 & 34.

24. *See supra* note 21.

25. Important legal distinctions do exist. For example, a donor under (c)(4) authority who offers services that have been accepted would be clothed with the protections of the Federal Employees Compensation Act, 5 U.S.C. §§ 8101-8193 (1982), in the event of misadventure while those furnishing services under (c)(6) authority would not. *See also supra* note 21.

although (c)(6) authority would prove more restrictive if applied to individuals.[26]

It should be noted in the examination of the (c)(6) provisions that the writer has added to the statutory phraseology the prepositional phrase "of NASA," which does not appear in the subsection as enacted. The phrase has been inserted for clarity. From an examination of legislative history, the use *of NASA's* services, equipment, and facilities is intended in the scheme of reciprocal uses between the federal and non-federal entities described in the subsection.[27] Moreover, since NASA's "services, equipment, and facilities" may be used by others, and theirs "on a similar basis" may be used by NASA either "with or without reimbursment," those provisions of the subsection, when interlocked with the "cooperative" phraseology appearing in both (c)(5) and the remainder of (c)(6), furnish an exception to the 1849 Federal Miscellaneous Receipts Statute,[28] which ordinarily requires that the gross receipts of all monies received by any federal agency be deposited into the United States Treasury without abatement or deduction.

When read together with the "cooperative agreement" features of (c)(5), the import of subsection 203(c)(6) authorizes NASA to retain for the account of the Agency monies received from any entity for the use of NASA's "services, equipment, and facilities." It is this quantum of Space Act authority, for example, which permits NASA to launch privately-owned satellites under agreements that provide for reimbursement to, and retention by, NASA of monies received for furnishing those services at the facilities of the Kennedy Spacecraft Center. With respect to other constructions assigned by the legislative history to subsection 203(c)(6), the words "Federal and other agencies" mean "Federal and non-Federal agencies" "both public and private,"[29] while the

26. From legislative history, (c)(6) authority, in appropriate instances, could extend to "foreign and overseas organizations and individuals." SELECT COMM. ON AERONAUTICS AND SPACE EXPLORATION ON H.R. 12575, H.R. DOC. NO. 1770, 85th Cong., 2d Sess. 9 (1958) [hereinafter H.R. DOC. NO. 1770].

27. From the legislative history the "Agency's services, equipment, and facilities" are intended. S. REP. NO. 1701, 85th Cong., 2d Sess. 8 (1958), accompanying the Space Act of 1958 [hereinafter S. REP. NO. 1701].

28. Codified at 31 U.S.C. § 3302(b) (1982). For application of exceptions to the Federal Miscellaneous Receipts Statute where, as in NASA's case, authority exists for a non-federal entity to reimburse a federal agency pursuant to statutorily sanctioned cooperative arrangements, see 23 COMP. GEN. 652 (1944), holding that in these circumstances monies received by the federal agency may be retained for the account of the agency and not deposited into the U.S. Treasury as miscellaneous receipts. These types of cooperative arrangements are not assistance relationships within the meaning of the 1977 Grant and Cooperative Act, *supra* note 5. *See supra* note 12 and *infra* note 31.

29. S. REP. NO. 1701, *supra* note 27, at 15; H.R. DOC. NO. 1770, *supra* note 26. The legislative history suggests that subsection 203(c)(6) also furnishes authority "to transfer

reach of the subsection may even extend to "foreign and overseas organizations and individuals."[30]

III. ANALYSIS OF SUBSECTION 203(C)(5)

In contradistinction to the provisions of subsections 203(c)(4) and (c)(6) relating in their entirety to NASA's authority for elaborating Space Act Agreements, only certain provisions in subsection 203(c)(5)—notably those pertaining to "cooperative agreements and other transactions"—may be included within the quantum of Space Act Agreement authority.[31] Other phraselogy in subsection 203(c)(5) pertaining to "contracts" and "leases" furnishes NASA with the substantive authority to enter into formal procurements classifed as such.[32] Consequently, to comport with basic canons of statutory construction, the "cooperative agreements and other transactions" features of (c)(5), as well as the provisions of (c)(6), may only be invoked to support the elaboration of agreements, with or without consideration, falling beyond the ambit of "procurement contracts" as defined in statutes of government-wide application.[33] Any other construction would make the words "cooperative agreements and other transactions" in (c)(5) and, for that matter, all of the words in (c)(6) superfluous, or even meaningless.[34]

---

to or to receive from any other govenmental agency without reinbursement supplies, equipment, aircraft, missiles, space vehicles, and related parts other than administrative supplies or equipment." S. REP. NO. 1701, *supra* note 27, at 15. This particular aspect of (c)(6) authority pertains to so-called "Interagency Agreements," which by NASA Regulation are limited to other federal departments and agencies. *See* NASA MGMT. INSTRUCTION (NMI) No. 1050.1B (Sept. 22, 1970) and NASA MGMT. DELEGATION (NMD) No. A 1050.2A (Jan. 22, 1969).

30. *See supra* note 26.

31. The unfortunate use as an artful term of the words "Cooperative Agreement" in the 1977 Grant and Cooperative Act, *supra* note 5, *see also infra* note 61, has resulted in confusion, since nineteen years prior to their artful appearance in 1977, the same words were inserted in subsection 203(c)(5) of the Space Act. That the adjective "cooperative" is not artfully employed in (c)(5) is borne out by legislative history. In earlier bills for the Space Act, only the word "agreement" appears without the modifier "cooperative." *See* S. REP. NO. 1701, *supra* note 27, at 8, 15. In the remaining provisions for (c)(5) dealing with small-business allocation, "cooperative" does not modify the noun "agreements." *See supra* text accompanying note 22. As used in (c)(5), the term "agreement," with or without the modifier "cooperative," is a part of the quantum of NASA's Space Act Agreement authority. To allay confusion, NASA, by Regulation, now limits the use of the term "cooperative agreement" to those arrangements classified as such under the 1977 Grant and Cooperative Act, *supra* note 5. *See* NASA HANDBOOK, *supra* note 12, at para. 301(b).

32. This comes within the meaning of the classification for "procurement contracts" contained in section 6301 of the 1977 Grant and Cooperative Act, *supra* note 5.

33. *See id.* at § 6303.

34. Simply stated, if certain words in the Space Act or other specific legislation fur-

IV. SCOPE AND OBJECTIVE OF THE STUDY

Except for the passing observation that no provisions of NASA's organic statute may be used as a subterfuge to eviscerate federal procurement or personnel laws, no attempt will be made in these pages to gauge the outer perimeter of Space Act Agreement authority under subsections 203(c)(4), (5), and (6). On the other hand, it seems abundantly clear from legislative history and court pronouncements that the 85th Congress did intend that such authority, at NASA's option, could be used as a separate and distinct alternative to the use of the federal acquisition system and the federal personnel system.[35] Such was the manifest plan of the 85th Congress blunted through the years by a procurement mind-set which has existed within NASA from the beginning and which now may be institutionalized by the diminished expectations of the Agency wrought through recent tragedy.

It is the object of this study to examine the early utilization, current utilization, and under-utilization of NASA's unique authority to elaborate Space Act Agreements. The study will conclude by illustrating through the practical device of an annotated draft legal instrument the advantages which may be realized if federal and non-federal constituencies were to establish through these Agreements advanced, rather than cosmetic, Joint Enterprises to be used both as contemporary juridical models for current Earth-based R&D efforts between academia, government, and industry and as future harbingers and pathfinders for the space-oriented business transactions of the twenty-first century.

V. EMERGENCE OF SPACE ACT AGREEMENTS AND EARLY USES

For the first decade of NASA's existence, the authority to enter into Space Act Agreements without recourse to the Agency procurement

---

nish NASA with the substantive authority to enter into contracts, *see supra* note 4, to award grants, *see supra* note 5, and to appoint regular or special employees in the civil service, *see supra* notes 6 & 7, then other words or provisions found in subsections 203(c)(4), (c)(5), and (c)(6) do not constitute the authority to do those things, but must mean something else since any other result would assign to those provisions a redundancy that is repugnant to basic canons of statutory construction. To comport with those canons

> no word, clause, sentence, provision, or part [of the Space Act] shall be rendered surplusage, or superfluous, meaningless, void, insignificant, or nugatory, if that result can be avoided, unless it is not possible to give effect to every word without doing violence to the plain meaning of a word, or unless the exigencies of the situation . . . imperatively demand that some word, phrase, or sentence be discarded, disregarded, rendered useless, or deprived of meaning.

82 C.J.S. *Statutes* § 346 (1953). *See also* United States v. Daniels, 279 F. 844, 849 (2d Cir. 1922).

35. *See infra* note 70.

process was limited to arrangements by and between NASA and other *federal* agencies and to the acceptance of unconditional gifts or donations.[36] During 1967, an expansion of scientific and technical endeavor at the NASA-Ames Research Center in California's "Silicon Valley" catapulted that obscure federal laboratory[37] into an engine of change and innovation. As a result, and for the first time in the Agency's history, a NASA Research Center negotiated reimbursable and non-reimbursable Space Act Agreements with *non-federal* entities.

Oddly, these entities were the Law Schools at Stanford University and Santa Clara University, two institutions in close proximity to the Center. Under faculty supervision, Stanford law students were engaged at the NASA-Ames Legal Office in examining the array of criminal and civil law questions arising from the use of human test subjects volunteering for centrifuge experimentation. Meanwhile, both law faculty and students from the Santa Clara Law School were involved with the investigation of environmental impact problems arising from the commercial operation of supersonic aircraft.

The two areas of juridical investigation, as disclosed in the published literature, necessitated a virtual dovetailing of NASA technical facilities and University law library collections coupled with a requirement for joint supervision of law student performances by University faculty, on the one hand, and practicing NASA attorneys on the other. Since neither a government grant, contract, personnel action, or unconditional donation of services extended to situations where technical facilities, library collections, and professional supervisory functions were interlocked by a federal laboratory and neighboring university campuses for the joint production of research, a non-reimbursable Space Act Agreement was negotiated in 1967 with Stanford law student researchers followed, in 1968, by a reimbursable one with Santa Clara University for the use of law faculty and students. In both instances, these new and novel accords were predicated upon the plain language and legislative history of subsections 203(c)(5) and (6) of the Space Act.[38]

---

36. This authority is currently implemented by NASA Regulations contained in NMI No. 1050.1B (Sept. 22, 1970) and NMD No. A 1050.2A (Jan. 22, 1969, revalidated June 14, 1971) governing interagency agreements, and in NMI No. 1210.1A (Sept. 20, 1974) governing gifts and donations. *See supra* note 20.

37. Formerly one of the three laboratories of the National Advisory Committee for Aeronautics. *See supra* note 2.

38. Research through Stanford Law School under Space Act authority and on a *non-reimbursable* basis resulted in publication of a student Note entitled *Experimentation on Human Beings*, 20 STAN. L. REV. 99 (1967). The investigation furnished the standards for elaborating Agency-wide regulations and local Center instructions governing human

Crafted in simple language understandable to lawyer and layman alike, the written instruments memorializing these arrangements were neither procurement contracts nor grants, but rather reimbursable and non-reimbursable interchanges of services, equipment, personnel, and facilities between NASA-Ames and university campuses supportable by Space Act authority alone.

> In contrast to a grant agreement, the university had shared substantially in the cost of research, and Ames had also remained very much a part of the research process. In contrast to an R&D contract, where research is bought for NASA's benefit the [arrangement] was mutually beneficial; Santa Clara's students gained apprenticeship experience as they contributed to NASA's need. Moreover, Ames services, rather than money alone were of value to the university.[39]

Other universities soon became parties to a variety of separate Space Act Agreements extending predictably to NASA's primary research requirements for investigation in the physical sciences and life sciences. Since reimbursement from NASA was limited to "out-of-pocket costs"[40] alone, for the *use* of university services, equipment, personnel, and facilities as authorized by subsection 203(c)(6), rather than the open-ended, and at times uncontrollable, "direct and indirect" cost re-

---

research sponsored by NASA, which were tested and not found wanting when summary judgment in a case involving human research was granted to the Government (NASA) in Cutting v. United States, No. C76-299 SC (N.D. Cal., Aug. 16, 1977). Research through Santa Clara University Law School on a *reimbursable* basis resulted in the publication of a leading article by Huard, *The Roar, The Whine, The Boom, and The Law: Some Legal Concerns About the SST*, 9 SANTA CLARA LAW. 189 (1969). A subsequent Space Act Agreement extending to all departments of the same university was the progenitor of the NASA-Ames/University Consortium Agreement and the treaty approach in it applicable to all departments of many universities. *See infra* notes 45 & 49.

39. Muenger, *Searching the Horizon: History of the Ames Research Center, 1940-1976* (NASA SP-4304) 190 (1985). Apprenticeship experience at NASA-Ames for promising law students also included opportunities for them to represent the Agency, under NASA attorney supervision, as provided for in California Student Practice Rules of the State Bar, a further example of interlocking NASA's Space Act Agreement authority with State authority. *See supra* note 16.

40. Recapitulating without change the definition of "out-of-pocket" from earlier Space Act agreements preceding it, paragraph 22 of the NASA-Ames/University Consortium Agreement, *infra* note 45, indicates that the term

> means, when applied to the use of personnel or services, the immediate cash outlay in salary for labor or work, and, when applied to equipment or facilities, the immediate cash outlay for the use thereof; *exclusive* of any costs for overhead, administrative expenses, any contributions including employer's contributions required by law, cases, insurance, depreciation, or utility services.

All of these exclusions would qualify as allowable costs for cost-type procurement contracts, grants, and cooperative agreements classified under the 1977 Grant and Cooperative Act, *supra* note 5. In subsequent years the stringent "out-of-pocket" standard for reimbursement applicable to the Consortium was relaxed somewhat to permit reimbursement to the University of certain administrative expenses.

imbursable standards associated with conventional university grants and R&D contracts, federal costs were substantially reduced. Also reduced were the lead times required for committing federal and university resources to the joint effort.

The nature and character of collaboration between NASA and university scientists engendered, as well, additional advantages. As expressed in early comments by Dr. Harold P. Klein, former Director of Life Sciences at the NASA-Ames Research Center,

> In 1967 we in the life sciences at Ames were very, very new . . . and most of our people . . . had not come from space-related institutions [but] from universities. [W]e saw that these arrangements could bring a certain measurement of this university style into our own laboratories. So we quickly climbed on the bandwagon.[41]

The bandwagon described by Dr. Klein was hitched within a very short time to a team of runaway horses driven by NASA scientists held hostage for years to an incomprehensible and very costly federal procurement process. As mounting numbers of Space Act Agreements with universities threatened to overwhelm the limited administrative resources of the Center, a solution to the problem had to be found. It emerged in the form of a single master agreement containing as parties all universities subscribing to an unusual instrument patterned to a large extent upon seemingly alien organizational concepts set forth in a multilateral treaty containing more than 100 contracting parties, the International Telecommunication Convention.[42]

VI. THE NASA-AMES/UNIVERSITY CONSORTIUM—A "TREATY APPROACH"

In assigning a conceptual framework to the sequential schema for government R&D contract formation, execution, and termination, the commentator Cooper advances the novel proposition that government contractual relationships may be *more like treaties* than contracts in that often no real separation of the contracting parties actually occurs since political, though not legally enforceable, obligations often tend to

41. Muenger, *supra* note 39, at 192.

42. The multilateral treaty used as a model at the time of the Consortium Agreement was the International Telecommunication ("ITU") Convention, Geneva Revision Dec. 21, 1959, 12 U.S.T. 1761, T.I.A.S. 4892. The Consortium Agreement then, and The Enterprise Agreement which is the subject of this study now, contain in the fashion of the ITU Convention administrative regulations annexed to the basic contractual instrument. The ITU Convention was revised at Montreaux on Nov. 12, 1965, 18 U.S.T. 575, T.I.A.S. No. 6267; at Malaga-Torremolinos on Oct. 25, 1973, 28 U.S.T. 2495, T.I.A.S. No. 8572; and at Nairobi on Nov. 6, 1982 [hereinafter 1982 ITU Convention].

remain after contract completion.[43] The suggestion that government R&D contracts, with favored industries, are in substance *de facto* treaties masquerading in form as conventional contract instruments opens up intriguing lines of juridical investigation regrettably beyond the scope of this study. On the other hand, an admittedly "*de jure*-like" treaty approach, clearly available to NASA through the wide latitude of agreement-making authorized by the Space Act, furnished the means for accommodating, without any time constraints, multiple parties to a single master agreement not requiring the separation of any contracting party when all legally enforceable obligations were discharged. So it was that in the fashion of an international law-making treaty[44] a multiparty instrument styled as the NASA-Ames/University Consortium was elaborated during 1969 and 1970 by and between the NASA-Ames Research Center and a number of universities throughout the United States.[45]

Superseding earlier Space Act Agreements, including the seminal one with Santa Clara Law School,[46] the new Consortium Agreement established a legal framework and uniform conditions for interchanging between the NASA-Ames Research Center, on the one hand, and a number of universities, on the other, the services, equipment, personnel, and facilities controlled by each, either on a reimbursable or non-reimbursable basis. Apart from original university signatories, the instrument, in the fashion of a multilateral treaty, provided for the unconditional accession at any time by any university prepared to assume the obligations of a Consortium member.[47]

With mounting numbers of universities registering accessions, how-

---

43. Cooper, *Government Contracts in Public Administration: The Role and Environment of the Contracting Officer*, 40 PUB. ADMIN. REV. 459, 463 (1980).

44. The treaty was modeled after the 1982 ITU Convention, *supra* note 42.

45. *See* An Agreement Between the NASA-Ames Research Center and Participating Universities for Reciprocal Use of Services, Equipment, Personnel and Facilities for Other Purposes, Sept. 11, 1969 [hereinafter NASA/Ames Consortium Agreement].

46. *See supra* note 38. A joint venture for the production of juridical research now exists, through the Consortium, between the NASA-Ames Research Center and three California law schools with the facilities of one of them now being used for this study. The law school joint venture is discussed in Sloup, *Determination of Applicable Law to Living and Working in Outer Space: The Municipal Law Connection and the NASA/Hastings Research Project*, PROC. 25TH COLLOQ. ON THE L. OUTER SPACE 245 (1982).

47. From the documentation on file at the NASA-Ames Research Center, the original signatories to the Consortium Agreement were Santa Clara University and San Jose State University. Since September 11, 1969, when the Agreement was first opened for signature, *see supra* note 45, 134 universities have become parties to the Consortium. Procedures for subscription by original signatories and subsequent accession by other accredited institutions of higher learning were adopted from the procedures contained in the 1982 ITU Convention, *supra* note 42.

ever, changes or modifications to the Consortium Agreement could only be effected—again as in the case of a multilateral treaty arrangement—through a conference of all contracting parties. In 1971, the first, and only, Plenary Conference of the NASA-Ames/University Consortium was convened at the University of Santa Clara.[48] Changes were made to both the original Consortium Agreement and to certain policies affecting its administration through establishment of a Consortium Office at the NASA-Ames Research Center. Since that time, continuity in imparting to Consortium Members changes prescribed by subsequent enactments of federal statutes has been furnished largely through the Consortium Office, which coordinates today the joint research efforts of some 134 universities as co-equal participants.[49]

In and of itself, the Consortium Agreement is not an obligating document for dedicating to a discrete research objective either funds or other resources controlled by any signatory to it.[50] For any party to obligate funds or to dedicate other resources with or without funding, the Consortium Agreement must be implemented by either reimbursable or non-reimbursable "Interchanges"[51] by and between NASA-Ames and

48. The Conference, the "First Plenary Conference on NASA-Ames University Agreements," was held Feb. 4-5, 1971, at the University of Santa Clara, Santa Clara, California. For a model provision on such conferences, see 1982 ITU Convention, *supra* note 42, at art. 6, establishing the Conference of the International Telecommunication Union and the terms of reference therefor, including the power to revise the Convention if necessary.

49. Paragraph 24 of the NASA-Ames Consortium Agreement, *supra* note 45, provides that in addition to original signatories other accredited institutions of higher learning acceding unconditionally to the Agreement are invested with all rights and obligations on a co-equal basis with all other participating institutions.

50. As provided for in paragraph 3 of the NASA-Ames Consortium Agreement, *supra* note 45, no reimbursement in whole or in part for the use of a participating university's services, equipment, personnel, and facilities shall be made by NASA unless, in advance of the joint undertaking, a supplementary writing, styled as an "Interchange," requires NASA *inter alia* to reimburse the university for the use of identifiable, and specific, services, equipment, personnel, or facilities. While the NASA/Ames Consortium Agreement constitutes a legally binding joint undertaking for certain purposes, the instrument in and of itself *does not qualify as an obligating document within the meaning of* 31 U.S.C. § 1501 (1982) to support payment from federal appropriated funds. *See infra* note 51.

51. When a reimbursable "Interchange" implementing the Consortium Agreement is by and between NASA, on the one hand, and one or more participating universities, on the other; when the instrument evidencing the transaction is in writing, in a way and form and for a purpose authorized by the Space Act; when federal appropriated funds to cover the costs for reimbursement are available to NASA; and when payments therefor by NASA are for specific goods to be delivered or for work or services to be performed by one, or more, participating universities, the Interchange instrument then qualifies as an obligating document within the meaning of 31 U.S.C. § 1501. *See supra* note 50. The purpose of the statute is to prevent executive officials from excessive or inappropriate spending. United States v. American Renaissance Lines Inc., 494 F.2d 1059, 1062 (D.C.

one or more University parties to the Consortium. To ensure that Interchanges are not used as a sham or subterfuge to evade the formalities of the federal procurement system[52] and that the Space Act authority upon which they are predicated is not misapplied or misdirected, detailed instructions are published by the NASA-Ames Research Center. These instructions establish criteria and mandate requirements for distinguishing Interchanges and their use from conventional federal grants and contracts with Universities.

Revised through the years to reflect successive changes in statutes affecting the Consortium, the NASA-Ames Instructions governing Interchanges currently define them, in contradistinction to grants and contracts, as applicable to any "transaction which combines the property, money, effects, skill, and knowledge of NASA and one, or more, participating universities for the production of research of mutual benefit to the parties."[53] The definition describes "joint ventures" or "joint enterprises" as understood in commercial parlance.[54] While both transactions are clearly alien to the federal procurement process,[55] to underscore their separation from formal procurements, the NASA-Ames Instructions sanction the use of an Interchange only:

Cir. 1974), *cert. denied*, 419 U.S. 1020 (1974). Consequently the statute has no application to non-reimbursable Interchanges, to barter arrangements, or to exchanges or transactions not involving the payment of any federal appropriated funds. Moreover, insofar as reimbursable Interchanges under the Consortium were predicated originally upon a strict "out-of-pocket" rather than a "cost-type" standard for reimbursement, payments to participating universities, when compared to those made through grants or R & D contracts, were rather secondary. When considered on the basis of the joint use of federal and non-federal services, equipment, personnel, and facilities to accomplish a discrete research result, monies reimbursed by NASA through Interchanges operate in actuality as "boot" to balance the exchange of resources between the campus and the federal laboratory, and not as the *raison d'etre* for the transaction itself. Money, as "boot," is simply one resource item in the inventory of federal laboratory assets available to participating universities through the Consortium.

52. For purposes of this study, the words "federal procurement system," "federal procurement process," or "federal acquisition system" appearing throughout the text encompass the totality of rules, regulations, and procedures mandated by federal law and policy governing the use of the artful terms "Procurement Contract," "Grant Agreement," and "Cooperative Agreement," as classified in the 1977 Grant and Cooperative Act, *supra* note 5. While Federal Acquisition Regulations, *supra* note 11, deal essentially with Procurement Contracts, some are applied by NASA to Grant Agreements and Cooperative Agreements within the meaning of the 1977 Act. *See* NASA HANDBOOK, *supra* note 12, at para. 108. Grants and Cooperative Agreements are also administered within the procurement precincts of NASA.

53. NASA-AMES MGMT. MANUAL ISSUANCE (AMM) No. 1051-1, para. 3 (Mar. 7, 1983) [hereinafter MGMT. ISSUANCE]. This implements subsections 203(c)(5) and (6) of the Space Act and Agency-wide regulations contained in NASA Management Instruction (NMI) No. 8320.1B, entitled "Basic Policy for NASA University Relationships."

54. *See infra* notes 71 & 72.

55. *See infra* note 52.

> (1) when it entails by mutual effort the production of research in the form of an end-item including, by way of example, a written report, a model, a design, or a breadboard; and (2) when the price, if any, paid by NASA for the research produced takes into account, in general, the property, effects, skills, and knowledge or combinations of them furnished by the Federal Government to the joint research effort.[56]

In addition, the Instructions require that either NASA researchers, university researchers, or their students spend a certain amount of time both at the campus and at the NASA-Ames Research Center when contributing to the joint research effort, and that publications resulting from the research be jointly authored by NASA-Ames and university collaborators.[57]

Cast with the obvious intent of avoiding the strictures of the federal procurement process, these criteria for Interchanges, if met, do indeed accomplish that result. The central question remaining to this day is whether sufficient administrative oversight can be exercised to prevent abuses and confusion in the classification of Interchanges as components of a Space Act Agreement cast in the form of a multilateral treaty instrument and styled as the NASA-Ames/University Consortium.

VII. LEGISLATIVE AND CASE LAW PRONOUNCEMENTS

For the first eight years of the Consortium's existence, the classification of "Interchanges" through the Consortium, as opposed to the classification of "grants" and "contracts" through the federal procurement system, was left largely to the administrative processes of NASA. At the time the Consortium Agreement was elaborated, there were no uniform definitions within government for the terms "grant" or "contract." With the enactment in 1977 of the Federal Grant and Cooperative Agreement Act,[58] "procurement contracts,"[59] "grant agreements,"[60] and a new category of legal instrument—"cooperative

---

56. MGMT. ISSUANCE, *supra* note 53, at para. 5.

57. *Id.* at para. 7.

58. As codified in 31 U.S.C. §§ 6301-6308 (1982). See *supra* note 5 for prior legislative history.

59. The use of procurement contracts is authorized by 31 U.S.C. § 6303:

> An executive agency shall use a procurement contract as the legal instrument reflecting a relationship between the United States government and a State, a local government, or other recipient when—(1) the principal purpose of the instrument is to acquire (by purchase, lease, or barter) property or services for the direct benefit or use to the United States Government; or (2) the agency decides in a specific instance that the use of a procurement contract is appropriate.

60. The use of grant agreements is authorized by 31 U.S.C. § 6304:

> An executive agency shall use a grant agreement as the legal instrument reflecting a relationship between the United States Government and a State, a local government, or other recipient when—(1) the principal purpose of the relation-

agreements"[61]—were uniformly classified and their purposes described for the whole of government. Since the Federal Grant and Cooperative Agreement Act neither repealed nor otherwise affected the authority in NASA to negotiate Space Act Agreements, these were, and remain, beyond the scope of the 1977 Act.[62] As a practical matter, however, the new legislation did classify Space Act Agreements by exclusion since no such Agreement could now contain the essential statutory elements describing either a "procurement contract," a "grant agreement," or a "cooperative agreement." Fortunately, a year after enactment, and through case law, rather than statutory pronouncement, the reach of Space Act Agreements, although not drawn into issue in the case, was encompassed in the interpretations assigned to subsection 203(c)(5) by the court in *Lodge 1858, American Federation of Government Employees v. Webb*.[63]

The issue before the court in *Lodge 1858* focused upon whether NASA could displace civil service personnel holding competitive federal appointments under the authority of subsection 203(c)(2) of the

---

ship is to transfer a thing of value to the State or local government or other recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring (by purchase, lease, or barter) property or services for the direct benefit or use of the United States Government; and (2) substantial involvement is not expected between the executive agency and the State, local government, or other recipient when carrying out the activity contemplated in the agreement.

61. The use of cooperative agreements is authorized by 31 U.S.C. § 6305:

An executive agency shall use a cooperative agreement as the legal instrument reflecting a relationship between the United States Government and a State, local government, or other recipient when—(1) the principal purpose of the relationship is to transfer a thing of value to the State, local government, or other recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring (by purchase, lease, or barter) property or services for the direct benefit or use of the United States Government; and (2) substantial involvement is expected between the executive agency and the State, local government, or other recipient when carrying out the activity contemplated in the agreement."

But cf. supra note 31, distinguishing the term "cooperative agreement" contained in subsection 203(c)(5) of the Space Act from the term "Cooperative Agreement" appearing nineteen years later in the 1977 Grant and Cooperative Act, *supra* note 5.

62. "This Act does not cover all possible relationships that may exist between Federal agencies and others. For example, the sale, lease, license, and other authorizations to use Federal property, when not for the purpose of support or stimulation are not with the scope and intent of Pub. L. 95-224 or this guidance." Implementation of Federal Grant and Cooperative Agreement Act of 1977, Pub. L. 95-224, 43 Fed. Reg. 36,860 (1978).

63. 580 F.2d 496 (D.C. Cir.), *cert. denied*, 439 U.S. 927 (1978). *Lodge 1858* was decided before former subsection 203(b) of the Space Act was changed by amendment to subsection 203(c) as it exists today. The amendment did not change the phraseology. Therefore, "203(b)" in the opinion should now be read as "203(c)."

Space Act[64] with contractor personnel performing identical services through contracts awarded under the authority of those provisions contained in subsection 203(c)(5) pertaining to "contracts."[65] In holding that the NASA Administrator may do so, the court, citing the legislative history of (c)(5), asserted that the subsection gave "the Administrator *broad authority* to enter into and perform *contracts*, leases, agreements and other transactions, *on such terms* and for such periods *as he deems appropriate* with *any* public or private *agency*, firm, educational institution, or other *person*."[66] In language encompassing the "other transactions" features of (c)(5), the court, referring to the same wording in the subsection but with a different emphasis, observed that (c)(5) authorized the Administrator to enter into "contracts . . . or other transactions *as may be necessary* in the conduct of [NASA's] work and on *such terms as it may deem appropriate*."[67]

The court made it

> clear that the Subsection does provide a separate alternative independent means of performing NASA's statutory duties which Congress contemplated would be exercised contemporaneously with the authority conferred [by other provisions of the Space Act] in conformance with NASA's discretion and to the extent permitted by funds available from the yearly appropriations by Congress.[68]

Admittedly, the issues in the case did not involve the extent of NASA's authority to enter into Space Act Agreements supported by the "other transactions" features of (c)(5), in contradistinction to the "contracts" features of the same subsection. Since these terms cannot be synonymous,[69] however, the phraseology emphasized by the court, as set forth above, supports the proposition that the Administrator, through use of the "other transactions" authority in (c)(5), may also enter into Space Act Agreements as may be necessary in the conduct of NASA's work and on such terms as the Administrator deems appropriate.

The court also observed that the flexibility invested in the NASA Administrator under the subsection "epitomizes the Congressional intent to grant NASA the necessary authority and discretion to mount the gargantuan effort."[70] Considering the fierce competition for military,

---

64. *See supra* note 6.
65. *See supra* note 4.
66. *Lodge 1858*, 580 F.2d at 501 (quoting H.R. Doc. No. 1770, *supra* note 26, at 3160, 3178).
67. 580 F.2d at 510.
68. *Id.* at 511-12.
69. *See supra* note 34.
70. *Lodge 1858*, 580 F.2d at 501.

scientific, and industrial ascendancy in space, the reasons for the United States to continue to mount that gargantuan effort, as characterized by the court in *Lodge 1858*, have hardly diminished on the world scene. The accelerated expansion of Space Act Agreement authority to meet these competitive challenges contemporaneously, with the industrialization of outer space particularly, would seem to be a rather prudent national policy to follow.

VIII. EXTENSIONS OF SPACE ACT AGREEMENT AUTHORITY TO PRIVATE INDUSTRY

While, in the years prior to *Lodge 1858*, NASA had selectively used Space Act Agreement authority as a basis for negotiating relatively simple special-purpose arrangements with profit-making entities, the major use of that authority at the NASA-Ames Research Center continued to focus upon agreements involving only universities. Now, however, with the legislative history buttressed by the teachings of *Lodge 1858*, a stronger basis existed for extending Space Act Agreement authority beyond reimbursable and non-reimbursable Interchanges with universities alone. Moreover, apart from judicial pronouncements, the potential extension of that authority to support true, as opposed to cosmetic, "Joint Enterprises"[71] between government and private industry had received official consideration, if not sanction, on at least one occasion in the past.

> In 1971 the Department of Transportation (DOT) and the National Aeronautics and Space Administration (NASA) prepared a report, the Civil Aviation Research & Development (CARD) Policy Study, in response to a need for technological progress in aviation and concern over a depression in the United States aerospace industry and rising competition from abroad. The DOT and NASA, and Congress in re-

71. Although "joint enterprise" is a term sometimes used to define a non-commercial undertaking entered into by associates with equal voice in directing the conduct of the enterprise, when the term is used to describe a business or commercial undertaking, it has been used interchangeably with the term "joint venture" and the courts have not drawn any significant legal distinction between the two terms. County of Riverside v. Loma Linda Univ., 118 Cal. App. 3d 300, 313 n.4, 173 Cal. Rptr. 371, 376-77 n.4 (1981). "Joint ventures" or "joint enterprises" are legal relationships of recent origin created by the American courts. The "joint venture" necessarily involves the factor of common commercial purpose, while a "joint enterprise" is sometimes used to describe a non-profit undertaking for the mutual benefit or pleasure of the parties. *See* DeSuza v. Andersack, 63 Cal. App. 694, 702, 133 Cal. Rptr. 920, 925 (1976); State *ex rel.* McCrory v. Bland, 355 Mo. 706, 712, 197 S.W.2d 669, 673 (1946); Annot., 168 A.L.R. 929, 934. "Joint enterprise" and "partnership," however, are not synonymous terms. Connellee v. Nees, 266 S.W. 502, 503 (Tex. Ct. App. 1924); Greer v. McCrory, 192 S.W.2d 431, 439 (Kan. Ct. App. 1946); Stodgen v. Charlston Transit Co., 32 S.E.2d 276, 279 (Va. 1944). *See also* 48A C.J.S. *Joint Ventures* §§ 1-3; *see also infra* note 83.

> viewing the CARD study gave close attention to the extensive involvement of foreign governments in their aerospace industries. *The study recommended joint enterprises as a means of stimulating technological and industrial progress.*"[72]

While joint enterprises with the Aerospace industry as contemplated in the CARD Study were never elaborated at the NASA-Ames Research Center, certain concepts derived from the Study provided the basis for the Center to enter into a true "Joint Venture" with both a non-profit entity, the California Council of the American Institute of Architects ("CCAIA"), and a profit-making utility, the Pacific Gas and Electric Company ("PG&E"), for jointly designing, constructing, and funding, as a display for the public, an advanced technology house. The agreement which emerged, a Tripartite Joint Venture,[73] contained a clear division of labor for each of the three parties by allocating performances for basic research to the non-profit CCAIA,[74] for applied research to NASA,[75] and for technology advancement and product development to the profit-making PG&E.[76] The tripartite agreement also required NASA and PG&E to share the costs for producing the research result[77] and, together with the non-profit party, CCAIA, to share in the benefits arising from the research.

With progressive extensions of Space Act Agreement authority to the profit-making sector and with the negotiation in increasing numbers of more sophisticated arrangements,[78] a necessary requirement for

---

72. Anawalt & Robbins, *The Joint Enterprise: Collaboration Between the Public and Private Sectors* (to be published in 6 MICH. Y.B. INT'L LEGAL STUD. (1985)) (emphasis added). *See also* Glazer, *Astrolaw Jurisprudence in Space as a Place: Right Reason for the Right Stuff*, 11 BROOKLYN J. INT'L L. 1, 6 (1985).

73. Closer in concept to a "joint enterprise" rather than a "joint venture," *see supra* note 71, the agreement styled as "A Joint venture by and between the California Council of the American Institute of Architects, the National Aeronautic and Space Administration, and the Pacific Gas and Electric Company to Design and Construct, through applications of Advanced Technology, A Unique Dwelling and Display to be Known by the Name and Style of the Advanced Technology House," was executed by the named parties on February 4, 1980, and is contained in the documentation on file at the NASA-Ames Research Center.

74. *See id.* at art. IV.

75. *See id.* at art. V.

76. *See id.* at art. VI.

77. *See id.* at art. VII, para. 12.

78. These are discussed in Myers, Emerging Government Regulation of American Space Entrepreneurs (unpublished paper presented to the L-5 Society National Convention on Doing Business in Outer Space, Apr. 2, 1983) [hereinafter Myers L-5 Paper]; Myers, Cooperative Agreements with NASA for Space Business Activities (unpublished paper presented at the Third Annual Space Development Conf., San Francisco, Apr. 22, 1984) [hereinafter Myers Space Development Paper]; O'Brien, NASA Joint Endeavor Agreements (unpublished paper presented to the American Bar Association's Forum Committee on Air and Space Law, Nov. 1-2, 1984) [hereinafter O'Brien Paper]. Mr.

Agency administrative oversight emerged. To provide policy guidance, NASA Headquarters during 1984 issued Agency-wide regulations governing certain categories of reimbursable[79] and non-reimbursable[80] Space Act Agreements with private industry. Oriented in great measure toward space commercialization and potential entrepreneurial activities in or for space, these Agency-wide regulations now classify both reimbursable and non-reimbursable Space Act Agreements with industry and, in addition, reserve the term "Joint Endeavor Agreement" ("JEA")[81] exclusively for in-space activities requiring a NASA Shuttle flight.

Ancillary to the JEA is a Memorandum of Understanding ("MOU"), an instrument in the nature of a preliminary agreement between NASA and a proposing company, containing an expression of intent to negotiate a JEA while permitting both parties, at the same time, to coordinate activities while the JEA is being developed. In addition to these arrangements, Space Act authority is also relied upon to support Technical Exchange Agreements ("TEA's"), which, though similar to JEA's, require a more modest commitment from NASA and the industrial party; Industrial Guest Investigator Agreements ("IGIA's") authorizing assignment of an industry scientist to a NASA Center; and subsidiary written arrangements.[82]

IX. THE LINGERING CLASSIFICATION PROBLEM

Contemporary Space Act Agreements with private industry, as governed by Agency-wide regulations, have recently been examined in the legal literature and in business annals where there is a tendency to use with annoying frequency the term "industry partner"[83] to describe the

---

James R. Myers, author of the first two papers, is in private practice. Mr. John E. O'Brien, who authored the remaining paper, is the General Counsel of the NASA. These papers are in the possession of the author.

79. NASA MGMT. INSTRUCTION (NMI) No. 1050.7 (July 12, 1984).

80. NASA MGMT. INSTRUCTION (NMI) No. 1050.6A (Dec. 17, 1984).

81. *Id.* at para. 1.c.(6).

82. Joint Endeavor Agreements, Memoranda of Understanding, Technical Exchange Agreements, and Industrial Guest Investigator Agreements are discussed in Myers L-5 Paper and O'Brien Paper, *supra* note 78.

83. Even Myers in his Space Development Paper, *supra* note 78, has loosely used the term in speaking of "NASA and the industrial partner." To the extent that mutual agency is characteristic of partnerships, that partnerships are treated ordinarily as legal entities separate and apart from the co-partners who form them, and that they are organized solely for profit, an act of Congress would be required, if constitutionally permissible at all, for NASA to have an industrial partner. Conversely, mutual agency, which is characteristic of partnership, has not been imposed upon joint ventures or joint enterprises when their undertakings are limited in scope, and it would be inequitable to do so. *See* Hayward's v. Nelson, 143 Cal. App. 2d 807, 817-19, 299 P.2d 1013, 1020-21 (1956).

profit-making entity signing the agreement. Short of an act of Congress, no instrument fashioned under Space Act authority, however broadly interpreted, can create a "partnership" with NASA. On the other hand, the terms "Space Act Agreement" and "Joint Endeavor Agreement," as generally described and classified in NASA Regulations, furnish no clues as to the precise types of business transactions familiar to the commercial world that may be negotiated under Space Act Authority except on the basis of exclusion since none of these transactions may be a procurement contract, grant agreement, or cooperative agreement within the meaning of the Federal Grant and Cooperative Agreement Act.[84]

The recent expansion of Space Act Agreements to accommodate the private sector suggests that one single artful standard for classifying all of them, whether negotiated with profit-making or non-profit entities, would prove appreciably more useful than the molecular classifications for the limited types of these agreements now categorized in separate NASA regulations as "certain interagency agreements,"[85] "certain agreements with colleges and universities,"[86] "certain Space Act Agreements involving reimbursment,"[87] "certain Space Act Agreements not involving reimbursement,"[88] and "Joint Endeavor Agreements."[89] If the common purpose running through all of these agreements is to distinguish them from the three instruments described in the Federal

---

See also 48A C.J.S. *Joint Ventures* § 5 (distinguishing partnerships from joint ventures). *But see* Smalley v. Baker, 262 Cal. App. 2d 824, 837, 69 Cal. Rptr. 521, 530 (1968). Moreover, joint ventures or joint enterprises need not be organized exclusively for profit and they are not treated as entities separate and apart from the Co-adventurers organizing them. *See supra* note 71 and *infra* note 97. Apart from the joint enterprise approach to space commercialization, which would not require an act of Congress for NASA's participation as a Co-adventurer, the legal literature contains other approaches, such as organizing through Act of Congress a wholly-owned government corporation or quasi-public corporation to stimulate space commercialization. *See* Freeman & Inadomi, *Who's the Captain Kirk of This Enterprise?: Regulating Outer Space Industry Through Corporate Structures*, 18 U.C. DAVIS L. REV. 785, 808-16 (1985). See also note 102 *infra*, regarding a proposal for an International Finance Corporation for Space.

84. *See supra* notes 59-61. *See also* NASA REGULATIONS (NMI) Nos. 1050.6A (Dec. 17, 1984) and 1050.7 (July 12, 1984). The distinction between "transactions" entered into under the authority of subsection 203(c)(5) and other provisions of the Space Act, regulated by the 1977 Grant and Cooperative Act, is also preserved in section 301(b) of the NASA Grant and Cooperative Agreement Handbook Instruction, 14 C.F.R. 1260.301(b)), *supra* note 12.

85. NASA REGULATIONS (NMI) No. 1050.1B (Sept. 22, 1970) and NASA MGMT. DELEGATION (NMD) No. A 1050.2A (Jan. 22, 1969).

86. NASA REGULATIONS (NMI) No. 1050.3H (Dec. 17, 1980).

87. NASA REGULATIONS (NMI) No. 1050.7 (July 12, 1984).

88. NASA REGULATIONS (NMI) No. 1050.6A (Dec. 17, 1984).

89. *Id.*

Grant and Cooperative Agreement Act,[90] legislative history and court pronouncements provide ample clues for formulating a legal standard differentiating Space Act Agreements in any category from all others. Though admittedly unwieldy, the following proposed findings and determinations distinguishing Space Act Agreements in all categories from procurement contracts, grant agreements, and cooperative agreements is advanced by the writer as meeting the essentials of an artful legal standard:

FINDINGS AND DETERMINATIONS

IF upon examination of all provisions contained within the four corners of any Agreement crafted alone on the basis of Space Act authority together with the examination of obligating documents, if any, ancillary to that particular Agreement;

IT IS FOUND AND DETERMINED,

that, when considered *as a whole and as a non-severable transaction*, the Agreement together with obligating documents, if any, cannot, *in its entirety*, be properly regulated through the conventional scheme of Government-wide procedures for procurement contracts, grant agreements, or cooperative agreements applied in the usual course of business and routinely by Agency procurement or grant specialists administering those instruments;

THEN PRESUMPTIVELY;

the transaction *as a whole* reflects neither a procurement nor an assistance relationship as classified in the Federal Grant and Cooperative Agreement Act, but falls instead within the scope of the term "other transactions" as set forth in subsection 203(c)(5) of the National Aeronautics and Space Act of 1958, or within the ambit of subsection 203(c)(6) of the Act, or both;

WITH THE CONSEQUENTIAL RESULT:

that the Agreement together with all obligating documents, if any, comprising the transaction is to be deemed and considered for all purposes as a single integrated Space Act Agreement with no provision or component thereof severable from any other; *except* that nothing contained in the application of these guidelines is to be construed as preventing, at NASA's option, the use of subsidiary instruments regulated by Government-wide procedures applicable to procurement contracts, grant agreements, or cooperative agreements for aiding the Agency in discharging obligations arising under any Space Act Agreement.

In retrospect, the early law school agreements with the NASA-Ames Research Center,[91] other multiparty instruments with educational institutions,[92] and finally the Tripartite Joint Venture[93] were way-stations

90. *See supra* notes 59-61.

91. *See supra* note 38.

92. The Consortium Agreement, *supra* notes 45, & 49-51, excluded junior colleges as participants. On May 14, 1971, "An Agreement Between the NASA-Ames Research

along the road in applying the "Findings and Determinations" advanced above for differentiating Space Act Agreement authority from other authority contained in the Space Act. First, the elements of international treaty law, entirely alien to the Federal procurement process, were applied by analogy in the Consortium Agreement and interlocked with Space Act authority to produce a multiparty instrument not susceptible to classification under the Federal Grant and Cooperative Agreement Act.[94] Second, if true, as opposed to cosmetic, "partnerships" with NASA were deemed as falling beyond the outer perimeter of Space Act authority, true "joint ventures" and their variant "joint enterprises" did not, as exemplified by the Tripartite Joint Venture.[95] As creatures of case law, these business transactions, used extensively in commerce and susceptible to commercial classification, are not treated by the courts as legal entities separate and apart from the parties organizing them, as are partnerships. Again, in contradistinction to partnerships, which are established for profit-making purposes, joint ventures and joint enterprises need not be organized solely for pecuniary gain,[96] a factor essential to NASA's participation in them since, from the Agency's standpoint, a public purpose consistent with NASA's statutory charter must be identified in the arrangement if support for it is to be derived from Space Act authority.

On this critical element of impressing the arrangement with a public interest as a necessary requirement for the use of Space Act authority, a joint enterprise need not even involve the factor of a common purpose shared by all, but may encompass in the same instrument or scheme profit-making or non-profit objectives, or a mix of both. Finally, it is

---

Center and Participating Junior College Districts for Reciprocal Use of Services, Equipment, Personnel and Facilities" ("Community College Districts Agreement") was elaborated to include junior colleges. The Community College Districts Agreement which, like the Consortium, remains in force today at the NASA-Ames Research Center, was also modeled to a limited extent upon the 1982 ITU Convention, *supra* note 42. A major advance in the Community College Districts Agreement was to combine federal concepts of Work-Study and state concepts of Work-Experience in a single artful definition styled as "Work-Engagement." "Work-Engagement" connoted "employment for the NASA-Ames Research Center, including employment in apprenticeable occupations undertaken by pupils qualified to participate in a State or Federally-approved Work-Experience or Work-Study Program determined by a Participating Community College to have educational value for the pupil so employed." *See also supra* note 16. The words "Work-Engagement" are used in an entirely different context in article 18 of The Enterprise Agreement, which is the subject of this study. As in the case of the Community College Districts Agreement, the "Work-Engagement Plan" under The Enterprise qualifies as an obligating document if appropriated funds are to be expended. *See supra* notes 50-51.

93. *See supra* note 73.

94. *See supra* notes 58-62.

95. *See supra* note 73.

96. *See supra* notes 71 & 83.

not even essential that the instrument or scheme itself be cast or organized as one of "mutual benefit" implying an identity of purpose among all of the parties. Instead, the instrument or scheme may also provide for "concurrent benefit," implying independence of purpose by a mix of profit-making, non-profit, and governmental entities with only a coincidental opportunity to accomplish the purpose in company with each other.[97]

X. "PUSHING THE OUTER ENVELOPE" OF SPACE ACT AGREEMENT AUTHORITY—THE ADVANCED JOINT ENTERPRISE

The remainder of this study will identify ways and means for constructing a juridical model which expands, in the interests of enhancing opportunities for space commercialization, the various legal principles and concepts tried and tested in the earlier Space Act Agreements which have been discussed. The text of the proposed Enterprise Agreement as reproduced in these pages with suitable annotations does not, in consequence, constitute a radical departure in the use of Space Act Agreement authority. The Enterprise merely expands the multilateral treaty approach characterized in the earlier Consortium Agreement by adopting much of the language, and more of the juridical concepts, contained in an unorthodox treaty model common to both, the International Telecommunication Convention.[98] Under the Consortium, for example, a non-permanent organ, the Plenary Conference, and a permanent one, the Consortium Office, were established for the purpose of managing the Consortium and furnishing needed continuity between meetings of signatories to that multiparty instrument. The Enterprise, if established, would contain two non-permanent organs, the Plenary Conference and Correspondence Committees, as well as two permanent organs, the Enterprise Council and the General Secretariat, to manage

97. "Counsel may be confusing *mutual* benefit which is essential to a finding of joint enterprise with *concurrent benefit*, which is another thing entirely. The one term implies identity of purpose, the other independence of purpose with only a coincidental opportunity to accomplish it in company with another." Dickey v. Nations, 479 S.W.2d 208, 210 n.2 (Mo. Ct. App. 1972). "The Joint Enterprise between University Federal and Profit-making Constituencies," as crafted in this study, partakes of both concepts. As between the University, Federal, and Industrial Co-adventurers who are, or may be, parties to the instrument, the arrangement is one of mutual benefit. As between the academic, governmental, and business constituencies they represent as "members" of the Enterprise not in privity of contract, the arrangement is one of concurrent benefit which may ripen through coincidental opportunity into one of mutual benefit depending upon the needs of the Enterprise at the time. *See also supra* notes 71 & 83.

98. *See supra* note 42.

the Enterprise and furnish continuity between meetings of signatories to that multiparty instrument.

As to additional comparisons, the existing Consortium Agreement makes provision for a single educational institution in close proximity to the NASA-Ames Research Center to function as agent for some 134 Universities as parties to the arrangement. The Enterprise Agreement likewise makes provision for a single educational institution in close proximity to the NASA-Ames Research Center to function as agent for all other educational institutions. In addition, the Agreement makes provision for NASA to function as agent for all other federal instrumentalities and, furthermore, contains procedures permitting industries, in categorical situations, to function as agents for all other industries.

This cardinal feature linking university, federal, and profit-making constituencies expands concepts derived from the second Space Act Agreement discussed in this study, the Tripartite Joint Venture between NASA-Ames, on the one hand, and both a non-profit entity and a profit-making one, on the other, for the design and construction of an advanced technology house as a public display.[99] Moreover, like the Joint Venture preceding it, the proposed Joint Enterprise provides for mixed contributions of federal funds and corporate capital to sustain basic research by and through the educational co-adventurer charged with that performance under the Enterprise arrangement.

There would exist, of course, no reason for this study if certain features of the Enterprise did not depart from the Space Act Agreements of the past. Thus, although the International Telecommunication Convention furnishes the juridical model for both the existing Consortium and the Enterprise Agreement, a more subtle nexus exists between the ITU Convention and the Enterprise. The purpose of the ITU Convention is to harmonize in one instrument with many signatories competing interests in three forms of electrical communications: telegraphy, telephony, and radio.[100] The purpose of the Enterprise Agreement is to harmonize in one instrument with many signatories competing interests for resources controlled by three differing, and disparate, types of entities associated with academia, government, and private industry.[101] It is the manner in which these competing interests may be reconciled, and the potential for realizing cost reductions and business efficiencies

99. *See supra* notes 73-77 and accompanying text.

100. *See* ITU Administrative Regulations annexed to Convention document, *supra* note 42.

101. In a general sense this was the object of the earlier Tripartite Joint Venture, *supra* notes 73-77.

through collaborative effort, which sets the Enterprise apart from anything ever attempted in the past.[102]

Finally, although the proposed arrangement is a multiparty instrument, the positions of the Permanent and Non-Permanent Co-adventurers who represent differing membership "constituencies" within the scheme should be examined since no Co-adventurer may assert dominion over any other. Each Co-adventurer exercises plenary authority, without recourse to any other, in the respective areas of endeavor allotted within the four corners of the instrument. The specimen Work Engagement Plan in Appendix A of this study, which implements, as an obligating document, the Enterprise Articles, illustrates on its face the co-equality of the parties to a discrete business transaction. This element of co-equality among Co-adventurers in controlling the respective areas of endeavor which constitute the business transaction does not mean, however, that the functional roles between the two Permanent Co-adventurers and various types of Non-permanent Co-adventurers are qualitatively the same. As one of two Permanent Co-adventurers, the University member assumes the mantle of "central broker" in the scheme as reflected in the diagram of the Enterprise annexed to this study as Appendix B. As the other Permanent Co-adventurer, the government member emerges as "honest broker" and *parens patria* for harmonizing the competing interests of universities and profit-making entities within the Enterprise as depicted in the chart contained in Appendix C. The meaning of the materials contained in the appendices should become much clearer to the reader after examining the following annotated Articles for:

---

102. If the *form* of the 1982 ITU Convention, *supra* note 42, can be used in a domestic scheme for advancing space commercialization through more efficient alignments of governmental, academic, entrepreneurial, and investment constituencies in the United States, do other treaty approaches furnish clues to broader alignments of the same types of entities across sovereign frontiers? In association with private investors and entrepreneurs *from many countries*, governments have, through the multilateral treaty mechanism of the International Finance Corporation, Dec. 5, 1955, 7 U.S.T. 2197, T.I.A.S. No. 3620, 264 U.N.T.S. 117, furnished unsecured risk capital to stimulate new industries in developing countries. Faced with the enormous allocations of resources and funds necessary for space industrialization, should not governments also begin to perceive outer space as a developing frontier? And if the United States were to take the lead in organizing an International Finance Corporation for Space, would this not, on the one hand, enhance the free enterprise system in space and, on the other, represent a significant contribution by this country to the "common heritage of mankind" concepts so prevalent today on the international scene and so nettlesome, in terms of practial meaning, at United Nations Conferences?

A JOINT ENTERPRISE
-between-
University Federal and Profit-making
Constituencies
-to-
Stimulate Research and Technology Transfer
Within the Aerospace Regime

WHEREAS, Space Treaty Law sanctions for peaceful purposes the conduct of public and private activities in that regime by governments, other non-profit entities, profit-making entities, or combinations of them, and to this end the establishment in terrestrial settings of new and novel business transactions conducted on Earth may well serve as useful juridical models for future business transactions conducted in outer space.[103]

WHEREAS, educational objectives for university participants; public-policy objectives for governmental participants; entrepreneurial and investment objectives for profit-making participants; and research objectives for all may be realized through association for their concurrent benefit in a single Joint Enterprise.[104]

WHEREAS, the Joint Enterprise as described would support new venues for research collaboration on an interdisciplinary basis; conserve costs; introduce additional economies of significant benefit; and create new institutional networks among participants leading to the efficient use and exploitation on Earth, in Space, or at both places of advanced technologies vital to the national interest.

NOW THEREFORE, under the authority of the Public Laws set forth herein, the parties, in consideration of their mutual promises, have subscribed to the following:

---

103. Governmental entities, public international entities, other non-profit entities, profit-making entities, *or any alignment or combination of them* may, as contemplated by Space Treaty Law, engage in activities in outer space. *See* Glazer, *Domicile and Industry in Outer Space*, 17 COL. J. TRANSNAT'L L. 67, 83 (1978). *See also* 1984 *Spring Moot Court Problem-Entitled Harris' Case*, 15 LINCOLN L. REV. & WHITE'S INN CHRON. 3 (1984).

104. The Joint Enterprise instrument is fashioned uniquely both for the mutual benefit of those participants, who subscribe to it as Co-adventurers, and for the concurrent benefit of others, who accede to the instrument as members of the Enterprise within the meaning of article 2. *See supra* notes 71 & 97.

ARTICLES OF JOINT ENTERPRISE
PART A. INTRODUCTION
Article I
Definitions

Throughout this Joint Enterprise, the following definitions are applicable:

1. *Instrument* means these Articles of Joint Enterprise including all Regulations annexed hereto.[105]

2. *Permanent Co-adventurers* mean the Educational Institution and the Federal entity subscribing to this Instrument as the University Co-adventurer and the Government Co-adventurer, respectively.[106]

3. *Non-permanent Co-adventurer* means any domestic profit-making entity, or institutional lender, acceding to this Instrument and, undertaking by separate agreement with either or both Permanent Co-adventurers, the obligations of an Industry Co-adventurer as set forth herein for the purpose of attaining a specific business or investment objective over a limited period of time.[107]

4. *Co-adventurers* mean Permanent and Non-permanent Co-adventurers styled individually in the Instrument as The University, The Government, and The Industry Co-adventurers.

5. *Work-Engagement Plan* means a written agreement between two or more Co-adventurers dedicating specific resources controlled by each for discharging, in whole or in part, the scope and objectives of the Joint Enterprise.[108]

6. *Principal/Agent Plan* means a written agreement by and between a single Co-adventurer, on the one hand, and any Member of the Enterprise or group of them not qualifying as a Co-adventurer, on the other,

---

105. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 83, specifying that the provisions of the Convention are complemented by certain Administrative Regulations.

106. Since only the two permanent Co-adventurers, an educational institution and a NASA Center, would sign these Articles of Joint Enterprise, this Space Act Agreement would be governed by the NASA Regulations contained in NMI 1050.3H, *supra* note 20.

107. Depending upon the particular arrangement or goal to be achieved, a non-permanent Co-adventurer may be in privity of contract under these Articles of Joint Enterprise either with the University Co-adventurer, the Government Co-adventurer, or both. If in privity of contract with the Government Co-adventurer (NASA), the arrangement could be governed by NASA Regulations contained in NMI 1050.7 or NMI 1050.6A, *supra* note 20.

108. If the Work-Engagement Plan requires, which it may not, payments from federal appropriated funds, the instrument would qualify as an obligating document. *See supra* notes 50-51. The concept of the Work-Engagement Plan is derived from the NASA-Ames Community College Districts Agreement, which, like these Articles of Joint Enterprise, interlocks provisions of the Space Act, other federal laws, and state laws as authority for the arrangement. *See supra* notes 16 & 92.

which is signed and executed by those parties, either as principals and agents, or as general partners and limited partners, or both for the purpose of discharging obligations or acquiring rights set forth in a specific Work-Engagement Plan.[109]

Article 2

Membership Qualifications and Membership Constituencies

1. Apart from the Co-adventurers, the Joint Enterprise shall also contain as Members, the following types of entities which accede in writing to these Articles of Joint Enterprise:[110]

UNIVERSITY CO-ADVENTURER AS GENERAL AGENT FOR INSTITUTIONS OF HIGHER LEARNING, OTHER RESEARCH INSTITUTIONS AND CERTAIN PUBLIC ENTITIES	(a)	all accredited, and domestically-chartered, Institutions of Higher Learning; all domestic non-profit Educational or Research Institutions; and all domestic public entities, excluding instrumentalities of the Federal Government, appointing as their General Agent, the University Co-adventurer, in the instruments of accession which are executed;[111]
GOVERNMENT CO-ADVENTURER AS GENERAL AGENT FOR FEDERAL INSTRUMENTALITIES	(b)	all instrumentalities of the Federal Government appointing as their General Agent, the Government Co-adventurer, in the instruments of accession which are executed;[112]

109. *See infra* notes 110-113.

110. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 46, providing for accession. By acceding to the Articles of Joint Enterprise a member does not acquire the rights of a Co-adventurer, but is eligible to become a party to a Principal/Agent Plan.

111. Agency as determinable by state law. The concept is derived from the Consortium Agreement, *supra* note 45, which designates one institution of higher learning in proximity to the NASA-Ames Research Center as agent for all other university participants.

112. Agency as determinable by federal law. Through Interagency Agreements elaborated under Space Act authority, *supra* note 20, NASA may function as agent for any instrumentality of the federal government.

INDUSTRY CO-ADVENTURER AS GENERAL AGENT FOR PROFIT-MAKING PRODUCERS OF GOODS OR SERVICES	(c)	all domestically chartered private profit-making entities offering products, goods, or services appointing as their General Agent, an Industry Co-adventurer, in the instruments of accession which are executed;[113]
INDUSTRY CO-ADVENTURER AS GENERAL PARTNER OR GENERAL AGENT FOR INSTITUTIONAL INVESTORS	(d)	all domestically chartered institutional lenders appointing, in the instruments of accession which are executed, an Industry Co-adventurer either as their General Partner in a Research and Developmental Limited Partnership or as their General Agent under any other arrangement for advancing venture capital to, or for, the Enterprise.[114]

2. Unless authorized by the consent of both Permanent Co-adventurers, no payment, or other consideration, for accession to membership shall be exacted from any applicant.

Article 3
Rights and Obligations[115]

The Co-adventurers and all other Members of the Enterprise shall have the rights and shall be subject to the obligations set forth in this Instrument.

Article 4
Scope and Objectives

1. The scope of the Joint Enterprise extends to the investigation of academic, governmental, entrepreneurial, and investment activities undertaken on Earth which are now operative, or may be operative, in the legal regime of outer space.[116]

2. The object of the Joint Enterprise is to combine and dedicate for the

113. Agency as determinable by state law.

114. Agency as determinable by state law.

115. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 2. Provisions of like import are contained in the Consortium Agreement, *supra* note 45.

116. NASA participation is authorized under the statutory terms of reference con-

concurrent benefit of membership constituencies the knowledge, experience, skills, property, time, money or other resources controlled by the Members for the purposes of:[117]

BASIC RESEARCH	(a)	undertaking fundamental, theoretical, or experimental research of new or novel impression leading to the expansion of knowledge in all academic disciplines within the scope of the Joint Enterprise;[118]
APPLIED RESEARCH	(b)	undertaking research directed toward practical uses of knowledge gained from fundamental, theoretical, or experimental research;[119]
TECHNOLOGY TRANSFER & INVESTMENT	(c)	enhancing in the private sector entrepreneurial and investment opportunities through the transfer of knowledge and technologies derived from research conducted through the Enterprise consistent, however, with the protection of intellectual property rights and other requirements mandated by law or contract.[120]

Article 5
Seat of the Joint Enterprise[121]

The Seat of the Enterprise shall be at an accredited college or university selected by the Permanent Co-adventurers and qualifying as a Member of the Enterprise. The Permanent Co-adventurers may establish additional offices of the Enterprise at other places.

---

tained in section 102 of the National Aeronautics and Space Act of 1958, codified as amended at 42 U.S.C. § 2451 (1982 & Supp. III 1985).

117. The object of the Joint Enterprise as memorialized in these Articles does not fall within the classifications for Procurement Contracts, Grant Agreements, or Cooperative Agreements as set forth in the 1977 Grant and Cooperative Act, *supra* notes 59-61. The Articles constitute a Space Act Agreement as governed by NASA Regulations. *See supra* notes 20, 106, 107 & 112.

118. *See* Statement of Objectives of Aeronautical and Space Activities in subsections 102(a)-(h) of the Space Act, 42 U.S.C. § 2451(a)-(h) (1982 & Supp. III 1985).

119. *Id.*

120. "The Congress declares that the general welfare of the United States requires that the National Aeronautics and Space Administration . . . seek and encourage, to the maximum extent possible, the fullest commercial use of space." Sec. 102(c), codified at 42 U.S.C. § 2451(c) (1982).

121. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 3. Unlike the ITU, which is invested by treaty with legal personality separate and apart from its members, the Enterprise is not and may not be in view of participation by a Government Co-adventurer. *See supra* note 83.

PART B. STRUCTURE

Article 6
Organs of the Joint Enterprise[122]

1. The Nonpermanent Organs of the Joint Enterprise are:
   (a) *The Plenary Conference* which is the supreme deliberative body of the Joint Enterprise.
   (b) *The Committees of Correspondence* which are specialized deliberative bodies of the Joint Enterprise functioning between Sessions of the Plenary Conference and complying with its mandates.
2. The Permanent Organs of the Joint Enterprise are:
   (a) *The Enterprise Council* which is invested with the authority to execute decisions for carrying out, and attaining, the objectives of the Joint Enterprise.
   (b) *The General Secretariat* which implements administratively the decisions of the Enterprise Council.

Article 7
The Plenary Conference[123]

1. The Plenary Conference shall be composed of all Members of the Enterprise and shall be convened, from time to time, either at the call of a majority of the Committees of Correspondence or by decision of the Enterprise Council.
2. The duties of the Plenary Conference are:

STRATEGIES AND POLICIES

(a) to recommend to the Membership strategies and policies on all matters falling within the ambit of the Joint Enterprise including recommendations for changing, or modifying, any or all provisions of the Articles of Joint Enterprise and the Regulations annexed to them;[124]

---

122. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 5. A Plenary Conference was also convened under the aegis of the NASA-Ames/University Consortium, *supra* note 45. The Enterprise Council is composed of the Permanent Co-adventurers exclusively, *see supra* note 106, while the General Secretariat would be the functional equivalent of the existing Consortium Office which currently administers the Consortium Agreement for numbers of participating universities. *See supra* note 42.

123. Adopted from the Conference provisions of the 1982 ITU Convention, *supra* note 42.

124. The Plenary Conference of the NASA-Ames/University Consortium, *supra* note 45, which convened but one time, did recommend changes to the Consortium articles and regulations. These were adopted by all parties, including NASA. The Conference deliberations are documented in the Consortium Office at the NASA-Ames Research Center.

VENUES OF COLLABORATION	(b)	to establish among Membership constituencies venues of collaboration within the Enterprise in order to advance, by way of description and not limitation, research opportunities; teaching and instructional opportunities; student, and other employment, opportunities; technology transfer opportunities; and entrepreneurial, including investment, opportunities;
MARKETING OF GOODS AND SERVICES	(c)	to accommodate at meeting rooms, halls, or other places, exhibitions; demonstration projects; and displays of products, goods, and services including their advertisement offered by various Membership constituencies at Conference sessions at no cost to the Enterprise;
COMMITTEES OF CORRESPONDENCE	(d)	to establish Committees of Correspondence, and appoint and fix the terms and conditions for the Chairmen and members thereof; *provided* that none of them are permanent Co-adventurers, or their representatives, or their staff members.

3. At each session the Plenary Conference shall select a Chairman, fix the Conference Rules, establish voting procedures for the Membership, and prepare a transcript of Conference proceedings which shall be made available to all members and to others at costs to be fixed by the Conference.

4. No member of any Permanent Organ of the Enterprise, nor any of their representatives, nor any members of their staffs may serve as a Conference Chairman, vote at a Conference or any meeting thereof, serve as a member of any committee established by or for the Conference, or otherwise appear at any meeting or activity of the Conference except those open to the general public. On a space-available basis, members of the general public by right may attend, as observers, general sessions of the Conference and other meetings declared by the Conference Chairman as open to the public provided that attendance, or registration fees, fixed by the Conference are paid by them in advance.

Article 8
Committees of Correspondence

1. The Committees of Correspondence shall be composed of the differing Membership constituencies represented at the Plenary Conference and collectively shall provide continuity between Plenary Conference sessions in advancing within the Joint Enterprise the interests of their respective constituencies.

2. The duties of Committees of Correspondence are:
   (a) to convene meetings for their special Membership constituencies, and deliberate upon, and frame, recommendations for consideration at Plenary Conferences or matters affecting their Members;
   (b) to organize subcommittees or study groups, where warranted;
   (c) to maintain communication with the Enterprise Council and to furnish recommendations or specialized expertise to the Council at the request of the Council.

3. Each Committee of Correspondence shall appoint its own Chairman, solicit its own members from the ranks of those who are Members of the Enterprise, and formulate its own procedures for conducting Committee business, *provided*, however, that no member of any Permanent Organ herein, nor their representatives, nor their staff members may serve in any capacity on any Committee, Subcommittee, or Study Group described herein or attend meetings of them other than as an invited observer.

4. Pending convocation of a Plenary Conference the University Co-adventurer may fulfill the functions of the Conference relative to the establishment of Committees of Correspondence as provided for in Article 7 subparagraph (d) of this instrument.

Article 9
The Enterprise Council[125]

1. The Enterprise Council shall be composed of, and limited to, the Permanent Co-adventurers whose unanimous decision shall be required for discharging any function of the Enterprise Council as set forth in this instrument *except* for those functions which by law are invested alone in one, or in the other, Permanent Co-adventurer.

2. Consistent with the requirements set forth in these Articles of Joint Enterprise and with due regard for the recommendations and policy

125. The Council is composed exclusively of the two Permanent Co-adventurers, an Educational institution, and a NASA Center. *See supra* note 106. The Council's charter, under article 9 of the Enterprise Articles, adopts the essentials for successful organizational operations advanced to President Reagan in a Private Sector Survey on Cost Control by allowing the NASA and Educational Co-adventurers latitude for (i) establishing the organizational structure for the permanent components of the Enterprise, (ii) setting pay scales and incentives for those employed by contract within the permanent structure, and (iii) controlling spending within the Enterprise. *See* J.P. GRACE, BURNING MONEY: THE WASTE OF YOUR TAX DOLLARS 169 (1984). This type of control is not, and probably cannot be, written into procurement contracts and assistance relationships entered into by government. *See supra* notes 59-61.

pronouncements advanced by the Nonpermanent Organs of the Enterprise, the Enterprise Council is invested with the sole power:

(a) to determine the organizational structure of the Permanent Organs of the Enterprise and provide for their Governance and Rules of Procedure;

(b) to appoint the staff members for the Permanent Organs and to fix and establish pay scales and incentives for them all; *except* those whose rates of pay are fixed by law or contract;

(c) to control throughout the Joint Enterprise the expenditure of funds allocated to the Enterprise from all sources; *provided*, however, that the control of Federal appropriated funds, if any, shall be, and remain, invested solely and exclusively in the Government Co-adventurer herein whose decisions concerning such expenditures shall be binding and conclusive upon all Members of the Enterprise;

(d) to prepare Regulations including standardized contractual, or other legal instruments annexed to them, which implement these Articles of Joint Enterprise and define with particularity the rights and obligations of Members and Membership constituencies within the Joint Enterprise;

(e) to take all actions and decisions necessary for attaining the objectives set forth in Article 4 of this Instrument through the use of services, equipment, personnel, facilities, funds, or other resources dedicated to the Enterprise by Members or Membership constituencies thereof.

3. No representative of any Permanent Co-adventurer herein shall have or maintain a financial interest in any member of the Enterprise including any other Co-adventurer unless such interest is deemed to be insubstantial through analogous application of Standards of Conduct Regulations pertaining to employees of the Government Co-adventurer.[126]

Article 10
The General Secretariat[127]

1. The General Secretariat shall be directed by the General Secretary of the Enterprise who shall be the chief administrative officer and business focal point for all activities of the Enterprise. He shall be assisted

126. These Regulations are contained in NASA HANDBOOK (NHB) No. 1900.1B, 14 C.F.R. pt. 1207 (1986).

127. *See supra* note 122.

by additional staff of the types and numbers approved by the Enterprise Council.

2. Under the direction of the General Secretary, the General Secretariat and staff thereof shall:

(a) implement the decisions of the Enterprise Council within the scope of delegable authority as well as provisions of other Articles contained in this Instrument requiring performances from the General Secretary;

(b) arrange conferences, meetings, seminars, and symposia at the request of Members of the Joint Enterprise or groups of them for any activity falling within the scope of the Enterprise;

(c) function as the business office and single administrative focal point for the Joint Enterprise;

(d) keep and maintain for publication and dissemination among all Members of the Joint Enterprise bulletins, descriptive literature, brochures, or other writings illustrating and identifying the types of laboratories, other specialized facilities, services, equipment, personnel, or Non-federal funding sources controlled by various Members or Membership constituencies of the Joint Enterprise.

4. Except for the salaries, bonuses, and incentives allocated to them by the Enterprise Council, neither the General Secretary nor any member of his staff shall receive pay, compensation, gifts, emoluments or any other thing of value from any Member of the Joint Enterprise for services or actions falling within the scope of the Joint Enterprise. Moreover, neither the General Secretary nor any member of his staff may have or maintain a financial interest in any member of the Enterprise including any Co-adventurer unless such interest is deemed to be insubstantial through analogous application of Standards of Conduct Regulations pertaining to employees of the Government Co-adventurer.[128]

Article 11
Funds in Trust[129]

Except for public monies, all other funds received at, or by, a member of any Permanent Organ of the Enterprise for use by the Enterprise

128. *See supra* note 126.

129. The concept of matching funds or contributory funds from the private sector is derived from the former Space Act Agreement between NASA-Ames, the California Council of the American Institute of Architects, and the Pacific Gas and Electric Company, *supra* notes 73-77. To ensure that such funds are committed in advance, Enterprise article 11 imposes a trust arrangement. A requirement for a non-federal entity to place funds in trust to secure future performance by that entity in a cooperative scheme

shall be transferred forthwith to the University Co-adventurer for deposit into trust fund accounts maintained for the Enterprise. Release of monies from trust shall require either the signature of the University Co-adventurer or the signature of an Industry Co-adventurer, or the joint signatures of both in accordance with the particular trust arrangement.

PART C. PERSONNEL

Article 12

Key Personnel [130]

1. The following persons are considered to be essential for dedicating to the Joint Enterprise resources controlled by the respective Co-adventurers employing or retaining them:

(a) the senior official, appointed under the authority of State law or corporate charter, who is in charge of the Educational Institution subscribing to this instrument as a Permanent Co-adventurer;

(b) the senior official, appointed under the authority of Federal law, who is in charge of the Federal entity subscribing to this instrument as a Permanent Co-adventurer;

(c) the senior official of any Non-permanent Co-adventurer whose professional credentials, prior to his appointment as the representative of that Co-adventurer, shall first be reviewed and approved by each of the senior officials identified in subparagraphs (a) and (b) herein.

2. The following person is considered to be essential for managing the Joint Enterprise consistent with decisions and delegations of authority from the senior official appointing him:

(a) the General Secretary of the Joint Enterprise who shall be appointed by the senior official identified in Paragraph 1(a) herein; *provided* that the professional credentials of the person so appointed, including experience in organizing, or managing, profit-making entities, are first reviewed, and approved for sufficiency, by the senior official identified in Paragraph 1(b);

(b) a decision, if any, by the senior official in Paragraph 1(a) herein

---

with a federal agency is not unknown in government business annals. *See* 23 COMP. GEN. 652 (1944).

130. Provisions for Key Personnel are adopted by analogy from standard clauses of like import inserted in Procurement Contracts. *See* NASA Supplement to the Federal Acquisition Regulations para. 18-52-235-71, codified at 48 C.F.R. § 1852.235-71 (1986). *See also supra* note 11.

to replace, or to divert the General Secretary from performances allocated to him under these Articles, shall require the ratification in writing of the senior official identified in Paragraph 1(b) herein.

Article 13
Transfers of Non-key Personnel[131]

1. The transfer of Non-key Personnel by and between the Government Co-adventurer and any Member of the Enterprise qualifying as a public instrumentality or educational institution within the meaning of the Federal Intergovernmental Personnel Act (5 U.S.C. §§ 3371-3375 (1982)) shall be deemed and considered for all purposes as a detail or assignment authorized by that Act, and the Government Co-adventurer shall prepare the necessary documentation to effect such detail or assignment.
2. If otherwise consistent with public law any Member of the Enterprise may transfer to any other, with or without reimbursement, personnel employed or controlled by that Member for the purpose of discharging the scope and objectives of the Enterprise as more particularly set forth in Article 4 of this Instrument.

Article 14
Student Employment for the Enterprise[132]

1. Consistent with Federal Work Study Programs for students as described in 42 U.S.C. §§ 2751-2757 (1973) as well as other Federal and State laws authorizing and regulating the employment of matriculated students at educational institutions, the General Secretary of the Enterprise shall establish and promulgate uniform procedures for identifying, at undergraduate levels and beyond, promising students, in all academic disciplines, for employment within the Enterprise, including, by way of description and not limitation, employment for research purposes, for administrative support purposes, or as trainees or apprentices.
2. In identifying promising students for employment at undergraduate levels and beyond, the procedures established by the General Secretary shall focus upon ways and means for transferring students, under struc-

131. This furnishes an example of interlocking specific federal statutes applicable to personnel with Space Act Agreement authority. *See supra* note 15. To the extent that these provisions of the Enterprise Agreement, as in the case of many others, are alien to the federal procurement process, the arrangement is presumptively a Space Act Agreement.

132. *See supra* notes 16 & 131.

tured programs, between University, Governmental, and Industrial Members of the Enterprise so that all students, in these programs during and throughout their undergraduate and graduate studies, gain experience at variegated laboratory facilities, industrial plants, and business offices operated by differing Membership constituencies including those operated by any Co-adventurer.

3. In collaboration with other educational institutions, the University Co-adventurer shall furnish to other Members of the Enterprise guidelines to be followed when academic credit is to be awarded to students for research or other experience gained through employment for the Enterprise.

PART D. MEMBERSHIP CONTRIBUTIONS AND COMMITMENTS

Article 15

By Permanent Co-adventurers

1. *The University Co-adventurer*—Within the limitations of, and consistent with, specific budgetary amounts available to the University Co-adventurer, either as a Principal or as a General Agent within the meaning of Article 2, Paragraph 1(a) of this Instrument, the University Co-adventurer shall:

(a) identify and commit from the inventory of Non-federal assets controlled by one or more Members the services, equipment, personnel, and facilities necessary for discharging basic research components in all Work-Engagement Plans signed and approved by the University Co-adventurer;[133]

(b) function as trustee, or as co-trustee if an Industry Co-adventurer is involved, for the receipt and expenditure of any funds transferred by any Member of the Enterprise or group of them for the use and benefit of the Enterprise other than funds appropriated by Federal law or State law.[134]

2. *The Government Co-adventurer*—Within the limitations of, and consistent with, specific budgetary amounts available to the Government Co-adventurer, either as a Principal or as a General Agent within the meaning of Article 2, Paragraph 1(b) of this Instrument, the Government Co-adventurer shall:

(a) identify and commit from the inventory of Federal assets available to the Government Co-adventurer the services, equipment,

133. *See* the language of subsection 203(c)(6) of the Space Act, codified at 42 U.S.C. § 2473(c)(6) (1982).

134. *See supra* note 129.

personnel, and facilities necessary for discharging applied research components in all Work-Engagement Plans signed and approved by the Government Co-adventurer;[135]

(b) reimburse the University, or other, Co-adventurers in whole or in part, as provided for in Work-Engagement Plans, for the costs of their respective monetary contributions dedicated to supporting any Organ of the Joint Enterprise within the meaning of Article 6 herein subject to all provisions governing the terms, conditions, and objects of reimbursement, together with those applicable to Limitations of Federal Obligations set forth in this Instrument and in the Regulations annexed.

Article 16
By Non-permanent Co-adventurers

1. *Industry Co-adventurers*—Within the limitations of, and consistent with, specific budgetary amounts available to Industry Co-adventurers either as Principals or as General Agents or General Partners within the meaning of Article 2, Paragraph 1(c) and (d) of this Instrument, the Industry Co-adventurers shall:

(a) upon executing with either, or both, Permanent Co-adventurers the separate agreement described in Article 1, Paragraph 3 of this Instrument, prepare for incorporation within the applicable Work-Engagement Plan to be considered, a prospectus describing the specific business objective, investment objective, or both to be attained;

(b) identify and commit from the inventory of Non-federal assets, including, where applicable, private investment funds controlled by one or more Members the services, equipment, personnel, facilities, and Non-federal monies, if any, necessary for discharging technology transfer, business investment components, or both in all Work-Engagement Plans signed and approved by the Industry Co-adventurer;[136]

(c) function as trustee, or as co-trustee if the University Co-adventurer is involved, for the receipt and expenditure of any funds transferred by any Member of the Enterprise or group of them for the use and benefit of the Enterprise other than funds appropriated by Federal law or State law.[137]

---

135. *See supra* notes 15 & 20 and text accompanying note 27.
136. *See supra* notes 15 & 20.
137. *See supra* note 129 and accompanying text.

Article 17
By Other Members or By Donors

1. Apart from the Co-adventurers, other Members of the Enterprise, if any, executing Principal/Agent Plans as described in Article 19 herein shall identify and commit from the inventory of resources and assets controlled by them the services, equipment, personnel, facilities, or funds, if applicable, necessary for discharging obligations contained in operative Principal/Agent Plans.
2. Notwithstanding any provision contained in this Instrument, Members of the Enterprise, or others, may donate, without condition, gifts of property, money, or services to either, or both, Permanent Co-adventurers herein, if such donation does not adversely interfere with, or impede, actions arising under this Instrument. To be valid, such unconditional donations, if offered, must be accepted in writing by either, or both, Permanent Co-adventurers and must be in conformity with public law regulating donations of property, money, or services to them.[138]

Article 18
Work Engagement Plans[139]

1. The legal document, and no other, for dedicating to the Enterprise resources controlled by Co-adventurers is styled as a Work-Engagement Plan within the meaning of Article 1, Paragraph 5 of this Instrument. Proposals for Work-Engagement may be submitted to the Enterprise Council by any Member, or group of Members, of the Joint Enterprise by and through the General Secretary who shall institute procedures for casting, and forwarding, proposals in a uniform format and style.
2. Any Member, or group of them, are authorized to meet, confer, obtain information from, and work directly with the staff of the General

138. *See supra* notes 20, 21 & 25.

139. If requiring the expenditure of federal appropriated funds, the Work-Engagement Plan is an obligating document. *See supra* notes 49-50 & 92. While any two, or all three, Co-adventurers (NASA, University, Industry) may subscribe to a single Work-Engagement Plan, certain advantages may be realized if separate Work-Engagement Plans *associated with the same transaction* were cast with only two Co-adventurers as parties to each. Thus, if NASA and the University were parties to one of the Work-Engagement Plans and the University and Industry parties to the other, there would be no privity of contract under such an arrangement between the NASA Co-adventurer and the Industry Co-adventurer. Here, the University Co-adventurer emerges as "central broker" in the scheme. Without the ingredient of privity of contract between the NASA and Industry Co-adventurers, federal regulatory requirements otherwise applicable to the Industry Co-adventurer would not be applicable. The University as "central broker" in the Enterprise constitutes a refreshing departure from the dominant role of Government associated with the Federal Procurement Process. *See supra* note 52.

Secretariat in preparing proposals for Work-Engagement. Apart from the statement of work, each proposal shall specify with particularity the types of knowledge, experience, skills, property, amounts of time, amounts of money, or other resources, controlled by two or more Co-adventurers which must be dedicated to the Work-Engagement Plan as proposed.

3. Upon approval and subscription, Work-Engagement Plans shall commit and obligate the dedication of resources controlled by the Co-adventurers signing the Plans involved.

Article 19
Principal/Agent Plans[140]

1. The legal document, and no other, for dedicating to the Enterprise, by and through a Co-adventurer, resources controlled by a Member not qualifying as a Co-adventurer, is styled as a Principal/Agent Plan within the meaning of Article 1, Paragraph 5 of this Instrument. Any and all Principal/Agent Plans signed by the parties to them shall be physically annexed to the specific Work Engagement Plan(s) which they implement and shall be deemed as incorporated therein and made a part thereof.

2. The General Secretary shall establish and promulgate uniform procedures for ensuring that Work-Engagement Plans as described in Article 18 and Principal/Agent Plans implementing them are signed and executed contemporaneously and that originals thereof are properly distributed to the parties signing them.

Article 20
Intellectual Property[141]

1. Notwithstanding provisions contained in this Instrument, any

---

140. The concept of the Principal/Agent Plan is adopted from the NASA-Ames/University Consortium Agreement under which, at varying times, a single university in proximity to the NASA-Ames Research Center was selected as general agent for all others acceding to the Consortium as participating institutions. Over one hundred universities presently function through a single general agent. *See supra* note 45. Under the Enterprise, provision is also made for the NASA Co-adventurer to function as general agent for all other federal entities and for Industry Co-adventurers, if any, to function as general agents for the entrepreneurial and private investment sectors. *See supra* notes 111-14 and accompanying text.

141. Apart from the Small Business Patent Policy Act and the Presidential Memorandum cited in article 20, a spate of recent legislation involving intellectual property, which continues apace, will affect rights and obligations of Enterprise Members such as the proposed Federal Technology Transfer Act of 1986, S. REP. NO. 1914, 99th Cong., 1st Sess. 1 (1985), calculated to improve the transfer of commercially useful technologies from federal laboratories into the private sector; the Stevenson-Wydler

Work-Engagement Plan including any Principal/Agent Plan annexed thereto, if requiring the performance of experimental, developmental, or research work, shall, if funded in whole or in part from Federal appropriations, be deemed and considered a "funding agreement" within the meaning of the University Small Business Patent Policy Act, 35 U.S.C. § 201(b) and shall be governed by the remaining provisions contained in that Title as well as other applicable Federal laws together with the February 18, 1983 Presidential Memorandum on Government Patent Policy to the Heads of Executive Departments and Agencies (1 Pub. Papers 248, 1983).

2. All Members of the Enterprise including each Co-adventurer covenants and agrees to protect the confidentiality of invention disclosures, patent applications, proprietary and other confidential data required for performances through the Enterprise to the extent permitted by law.

3. This Article shall be implemented either by Regulations for Intellectual Property annexed to this Instrument or through appropriate provisions in Work-Engagement Plans or Principal/Agent Plans.

PART E. GENERAL PROVISIONS

Article 21

Best Efforts[142]

The Permanent Co-adventurers subscribing to this Instrument as Original Signatories and all other Members executing instruments of accession within the meaning of Article 30 herein will use their best efforts for attaining the objectives of the Joint Enterprise as set forth in Article 4 herein.

Technology Innovation Act of 1980, Pub. L. No. 96-480, 94 Stat. 2311, codified at 15 U.S.C. §§ 3701-3714 (1982), imposing duties upon federal laboratories as a national policy to transfer federal technology to industry, states, and localities; and the Bayh-Dole Patent and Trademark Amendments of 1980, Pub. L. No. 96-517, 94 Stat. 3015, codified as amended at 35 U.S.C. §§ 301-307 (1982 & Supp. III 1985), investing in non-profit organizations, especially universities, and in small businesses rights to inventions made under federal grants and contracts. Also, on September 16, 1986, the House of Representatives passed H.R. 4316, 99th Cong., 2d Sess. (1986), which, if enacted, would amend both Title 35 of the United States Code and the Space Act, by securing to inventors the same patent protections, irrespective of whether their activities occur in outer space or on earth.

142. The "best efforts" clause is an adaptation of language derived from Federal Procurement Practice and has also been inserted as a required clause in certain NASA Space Act Agreement Regulations. *See supra* note 20.

Article 22
Prohibitions

1. No member of, or delegate to, the United States Congress, or resident commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.[143]

2. No performance within contemplation of these Articles shall involve the construction, operation, or maintenance of any facility used, or to be used, for sectarian instruction or as a place for religious worship.[144]

3. No party to any Work-Engagement Plan or to Principal/Agent Plans in implementation thereof may be awarded any Federal Procurement Contract within the meaning of 31 U.S.C. § 6303 or any subcontract thereunder if performances contemplated within the Federal Procurement Contract or subcontract thereunder are based upon any systems engineering, or technical development, or the development of specifications, or statements of work resulting from any Work-Engagement Plan containing as a party the Government Co-adventurer herein. Such ineligibility shall remain in effect during, and for, one year after cessation of performances by the parties to the Work-Engagement Plan or one year during, as well as after, any extensions thereto unless the Government Co-adventurer determines that competition by, or procurement from, the ineligible party is in the best interest of the Government and is otherwise consistent with Federal law and Regulation, including those in support of small business.[145]

---

143. The so-called "officials not to benefit" clause is mandated by statute at 41 U.S.C. § 22 (1982) and is a required clause both in Federal Acquisition Regulations, 48 C.F.R. § 3.102 (1985), and in certain NASA Space Act Agreements. *See supra* note 20.

144. Depending upon the extent and nature of federal involvement under Work-Engagement Plans, such a clause would appear to be mandated by the United States Constitution.

145. In contrast to standards of conduct by individuals for avoiding conflicts of interest as set forth in paragraph 3 of article 9, *see supra* text accompanying note 126, and in paragraph 4 of article 10, *see supra* text accompanying note 128, paragraph 3 of article 22 is addressed to Organizational Conflicts of Interest, and is designed to prevent unfair competitive advantage by members of the Enterprise who are parties to Work-Engagement or Principal/Agent Plans involving NASA. For the history and development of the concept, see Pasley, *Organizational Conflicts of Interest in Government Contracts*, 1967 WIS. L. REV. 5. For purposes of federal organizational conflict standards, a contractor is defined as "any person, firm, joint venture, partnership, corporation or affiliate thereof which is a party to a contract with the United States," 32 C.F.R. § 1.2402(b) (1978).

Article 23
Limitation on Federal Obligations[146]

1. Any and all performances under this Instrument by the Government Co-adventurer or any other Federal Instrumentality remain subject, at all times, to the availability of Federal appropriations and no provisions of this Instrument including those in any annexed Regulation or in any Work-Engagement Plan or Principal/Agent Plan, commit the United States Congress to appropriate public monies therefor.
2. Neither these Articles of Joint Enterprise nor any Regulations annexed to them qualify within the meaning of Federal law, as obligating documents to support the payment of monies appropriated by Congress.

Article 24
Co-equality of Co-adventurers and Adjustment of Obligations and Burdens

1. Each Co-adventurer, in discharging respective functions allotted to that party under the terms of these Articles of Joint Enterprise, shall exercise plenary authority and responsibility therefor without recourse to any other Co-adventurer and all Co-adventurers herein are co-equal with none subordinate to any other in undertaking performances for the Joint Enterprise as set forth in operative Work-Engagement Plans.[147]
2. To the extent that certain privileges and immunities apply, as a matter of law, to the Government Co-adventurer but not to others, the Enterprise Council shall explore ways and means to compensate other Co-adventurers or Members for the privileges and immunities secured to the Government through equitable adjustments of obligations and burdens otherwise devolving upon non-federal members of the Enterprise who undertake performances under this Instrument.[148]

---

146. *See supra* notes 50-51.

147. The provision supports the concept of Joint Enterprise or Joint Venture which, unlike partnership, is not treated as an entity separate and apart from those organizing it. *See supra* notes 71 & 83. Also, and from the writer's observations, Procurement Contracts with industry and Grants with academia create all too frequently adversarial relationships with the government. The position of a party to a Government Procurement Contract or Grant is markedly different from the position of a Co-adventurer with the government where the risks and benefits of the joint undertaking are shared by co-equals, some of whom may, or may not, be subject to federal statutes or regulations when undertaking performances for the Enterprise. *See supra* note 133.

148. For example, if a third party claim in tort does not satisfy the jurisdictional requirement of the Federal Tort Claims Act, 28 U.S.C. § 2672 (1982), by being predicated upon a negligent act or omission of a federal employee *or if* the claim does not result "from the conduct of [NASA's] functions" as required by subsection 203(c)(13) of the Space Act, codified at 42 U.S.C. § 2473(c)(13) (1982), no federal official may entertain, or

3. In connection with performances under these Articles including Work-Engagement Plans which implement them, no Co-adventurer shall be deemed, or considered, as the agent for, or principal of, any other Co-adventurer.[149]

Article 25
Claims and Demands

For activities arising under these Articles including any Work-Engagement Plan or Principal/Agent Plan in implementation thereof:

1. A claim or demand against a Member or group of them by any, or by those, who are not members of the Enterprise shall be handled in accordance with Regulations governing third-party claims and demands.[150]

2. A claim or demand by one Member of the Enterprise or group of them against another Member of the Enterprise or group of them shall be handled in accordance with Article 26 and the Regulations described therein governing non-adversarial dispute resolution.

3. With respect to claims or demands described in Paragraph 1 herein, the General Secretary, upon receiving knowledge of the same, shall determine whether the third-party claimant will agree to the disposition thereof in accordance with Article 26 and the Regulations described therein governing non-adversarial dispute resolution. If agreement from the third-party claimant is obtained, then the Member of the Enterprise or group of them involved as parties to the claim or demand, shall be bound by the provisions of Article 26 and the Regulations in implementation thereof.

---

pay, it. To the extent that non-federal Co-adventurers, possessing no similar immunities, may be actionable on such a claim that conceivably might be eventuated by some activity of the Government Co-adventurer, equitable adjustment in obligation might entail payment by the Government Co-adventurer of insurance coverage protecting the non-Federal Co-adventurers.

149. *See supra* note 147. Short of an act of Congress, NASA may not be a party to a partnership or any other legal instrumentality in which participating federal and non-federal members are deemed to be, or function as, principals and agents for each other. Space Act Agreement authority extends to NASA's participation, however, in joint ventures and joint enterprises where a public purpose is served by them consistent with authority in the Space Act. *See supra* notes 71 & 83.

150. In this connection see *supra* note 148.

Article 26
Demonstration Project for Non-adversarial Dispute Resolution[151]

1. In collaboration with Law Schools and Schools of Business operated by academic Members of the Enterprise, the General Secretary shall institute within the Enterprise a Demonstration Project for investigating, and implementing by appropriate Regulations annexed to these Articles, existing, and innovative, approaches, mechanisms, and techniques for resolving by non-adversarial means disputes among any Members of the Enterprise or groups of them arising under these Articles including any Work-Engagement Plan or Principal/Agent Plan in implementation thereof.

2. Upon formulation of the Regulations described in Paragraph 1 herein, each Member, upon receiving notice thereof including opportunity to respond, covenants and agrees, as a condition for Membership in the Enterprise, to be bound by the Regulations except for Government Members, if any, whose adherence to them would be violative of public law.

3. To preserve the experimental integrity of the Demonstration Project described in Paragraph 1 herein including the rights of those, if any, furnishing funds for the Project, each Member covenants and agrees that any other Member or group of them shall have standing to file in a court of competent jurisdiction a petition for injunctive relief, or a complaint for damages, or both against any member or group of them fail-

---

151. The results to be achieved under this article may eclipse all others in the Enterprise considering that Astrolaw commentators seem united in support of the proposition that the adversarial system of dispute resolution will not only fail in space but, if followed, endanger the lives of spacefarers on missions of long duration. *See* Glazer, *Astrolaw Jurisprudence in Space as a Place: Right Reason for the Right Stuff*, 11 BROOKLYN J. INT'L L. 1, 15 (1985); Note, *Dispute Resolution in Space*, 7 HASTINGS INT'L & COMP. L. REV. 211 (1983); Sloup, *Legal Aspects of Large Space Structures: Factors Leading to the Development of Astrolaw Jurisprudence*, PROC. 27TH COLLOQ. ON THE L. OUTER SPACE 270 (1984). *See also* Costello, *Spacedwelling Families: The Projected Application of Family Law in Artificial Space Living Environments*, 15 SETON HALL L. REV. 11 (1984). *But cf.* Robbins, *The Extension of United States Criminal Jurisdiction to Outer Space*, 23 SANTA CLARA L. REV. 627 (1983). In harnessing the skills of law schools and business schools within the Enterprise to explore, *as a contractual requirement of the Enterprise binding upon all Members*, an array of non-adversarial techniques for dispute resolution, clues to a new, and a needed, jurisprudence for space may emerge. As candidly stated in one newspaper editorial:

> If astrolaw can raise out-of-court resolution to the *level of art*, that achievement could more than pay for a space station. Then perhaps we could borrow the techniques to cut down the lengthy litigation that has tied us up in knots down here on the edge of the wilderness.

Welcome Astrolaw, Santa Barbara Newspress, Feb. 29, 1984, at F10, col. 1 (emphasis added).

ing, or refusing, without legal sanction to exhaust non-adversarial remedies provided for in the Regulations prior to instituting a law suit against any Member, or group of them, arising from activities under these Articles including any Work-Engagement Plan or Principal/Agent Plan in implementation thereof. Notwithstanding, however, any provision contained herein, a Member, prior to exhausting non-adversarial remedies as described, may institute court action against another;

(i) if, as a matter of public law, the Regulations herein cannot be binding upon that Member; or

(ii) if, on the part of any Member, the institution of proceedings in a court of law is necessary for the limited purpose of preserving the running of the statute of limitations pending the outcome of non-adversarial approaches provided for in the Regulations, or to enforce the results thereof.

4. In collaboration with Law Schools and Schools of Business operated by academic Members of the Enterprise, the General Secretary shall explore, as a part of the Regulations to be formulated, additional means by contract to enforce this Article including, by way of description and not limitation, a requirement among Members to post a bond or to obtain sureties to secure obligations described herein except as to those Members, if any, prohibited by public law from doing so.

PART F. SPECIAL PROVISIONS

Article 27

Statement of Authority and Choice of Law[152]

1. With respect to dedicating services, equipment, personnel, facilities and funds for undertaking objectives of the Joint Enterprise as set forth in Article 4 herein:

(a) The authority for the Permanent Co-adventurers to subscribe to these Articles of Joint Enterprise is derived from subsection 203(c)(5) and (6) of the National Aeronautics and Space Act of 1958, as amended 42 U.S.C. § 2474(c)(5)(6) (1982).

(b) The authority for the Government Co-adventurer to assign or to detail civil service personnel to certain educational or public entities identified in Article 2(1)(a) herein and, in turn, to receive by assignment or detail personnel from those entities is set forth in the Intergovernmental Personnel Act (5 U.S.C. § 3371 (1982)).

152. See *supra* note 16, interlocking in the same Space Act Agreement federal and state statutory authorities to accomplish related public purposes. This feature, like others, distinguishes Space Act Agreements from Procurement Contracts and Grants.

(c) Apart from the Federal authority enunciated in subparagraphs (a) and (b) herein, the authority for the University Co-adventurer to undertake performances contemplated in these Articles of Joint Enterprise is also derived from the provisions of State statutes regulating non-profit educational institutions as more particularly set forth in Article 28 herein.

(d) Unless otherwise determinable by Federal law, rights and obligations of all non-Federal members of the Enterprise and each of them arising under these Articles of Joint Enterprise together with any instruments implementing them shall be determined by recourse to the laws of the State identified in Article 28 herein.

Article 28
Local Requirements

1. The local requirements applicable to the University Co-adventurer herein are set forth in Section ——— of the (State) Corporation Code and Section —— of the (State) Education Code together with the (State) Regulations contained in ———— which implement those statutes.

2. The local requirements regulating student employment for the Co-adventurers or for other members of the Enterprise are set forth in Section —— of the (State) (Labor) Code.

Article 29
Incorporation of Documents, Order of Precedence and Non-severability

1. As provided for in Article 9, Paragraph 2(d) of these Articles, Regulations approved by the Enterprise Council are deemed as incorporated within and a part of these Articles of Joint Enterprise. These Articles of Joint Enterprise, which include existing or future Regulations approved by the Enterprise Council and disseminated among the Members by way of notice, constitute the entire agreement and understanding between all Co-adventurers and are binding upon all other Members. In the event of inconsistencies between provisions contained in these Articles and in other applicable authorities, the following order of precedence shall govern the rights and obligations of all Co-adventurers and all other Members:

(a) Public Laws, Executive Orders, and Agency Regulations implementing them;

(b) These Articles of Joint Enterprise together with Regulations an-

nexed thereto as approved by the Enterprise Council and disseminated to the Members of the Enterprise.

2. The provisions contained in these Articles of Joint Enterprise including the Regulations annexed thereto are not severable, but interdependent, and in the event any such provision, or portion thereof, is declared invalid in a final proceeding by a court, administrative body, or administrative agency of competent jurisdiction, these Articles or Regulations, unless appropriately modified or changed by the Enterprise Council herein, shall be null and void in their entirety from the date of such determination.[153]

PART G. EXECUTORY PROVISIONS

Article 30

Accession to Joint Enterprise[154]

1. In addition to the Permanent Co-adventurers subscribing to this Instrument, any entity described in Article 2, Paragraph 1(a), (b), (c), or (d) herein may, upon written application communicated to the General Secretary of the Joint Enterprise, accede unconditionally to all terms and conditions set forth in this Instrument, and upon accession shall be deemed and considered for all purposes as a Member of the Enterprise.

2. The General Secretary shall formulate uniform guidelines for accession; disseminate that information to applicants; and otherwise assist them in understanding rights and obligations applicable to the differing Membership constituencies.

Article 31

Entry Into Force and Terminations[155]

1. *For the Permanent Co-adventurers*:

(a) *Entry into Force*: When signed by the principal representatives of the Permanent Co-adventurers, these Articles of Joint Enter-

153. The article bears some relationship to the proposed "Findings and Determinations" advanced by the writer in the text to support a single artful legal standard of "non-severability" distinguishing Space Act Agreements from Procurement Contracts, Grant Agreements, and Cooperative Agreements. *See supra* notes 59-61.

154. Patterned after the 1982 ITU Convention, *supra* note 42, at art. 46. The Consortium Agreement, *supra* note 45, and the Community College Districts Agreement, *supra* note 92, contain provisions for accession by educational institutions that were not original signatories to those instruments.

155. Applicability of the Enterprise arrangement at differing times, for differing purposes, and to differing categories of members and their constituencies, invests the arrangement with the elements of a Joint Enterprise for the mutual benefit of some and for the concurrent benefit of others. *See supra* note 97.

prise shall enter into force and, as such, support the use and dedication of resources controlled by the Permanent Co-adventurers for the purpose of undertaking basic and applied research contemplated in Article 4, Paragraph 2(a) and (b) of this Instrument.

(b) *Termination*: Upon subscription by the Permanent Co-adventurers these Articles of Joint Enterprise shall remain in force unless terminated at the election of either party upon notice in writing forwarded by one to the other not less than six months in advance of the date of termination; *Provided*, that the party terminating these Articles bears the settlement costs, if any, including those applicable to Work-Engagement Plans or Principal/Agent Plans, if any, containing as a party the Permanent Co-adventurer terminating these Articles.

2. *For Non-Permanent Co-adventurers*:

(a) *Entry into Force*: When separate agreements, within the meaning of Article 1, Paragraph 3 of these Articles of Joint Enterprise, are executed by any Permanent Co-adventurer and any Non-permanent Co-adventurer, these articles shall enter into force with respect to the use and dedication of resources controlled by those Co-adventurers and, as such, support for all purposes undertakings either by University, Governmental, or both such Members, on the one hand, and Profit-making Members, on the other, of basic research, applied research, technology transfer, and business investment opportunities within the meaning of Article 4, Paragraph 2(a), (b), and (c) of this Instrument.

(b) *Termination*: For a Non-permanent Co-adventurer executing separate agreements hereinbefore described, these Articles of Joint Enterprise shall remain in force unless any and all separate agreements with the Non-permanent Co-adventurer, as provided for in Article 1, Paragraph 3 herein, are terminated either by the Permanent Co-adventurer(s) as a party, or parties, thereto or by the Non-permanent Co-adventurer(s) as a party thereto upon notice in writing forwarded by one party to all others not less than six months in advance of the date of termination; *Provided*, that the Co-adventurer(s) terminating separate agreements bear the settlement costs, if any, including those applicable to Work-Engagement Plans or Principal/Agent Plans, if any, containing as a party the Co-adventurer(s) terminating the separate agreements hereinbefore described.

3. *For Other Members*:

(a) *Entry into Force*: For entities eligible for Membership in the Enterprise, other than the Co-adventurers herein, these Articles shall enter into force as to such Members on the dates that their respective applications for accession to this Instrument, as provided for in Article 30 herein, are received by the General Secretary of the Joint Enterprise.

(b) *Termination*: A Member of the Enterprise, other than a Co-adventurer, may withdraw from the Enterprise and terminate all participation therein upon notice in writing to the General Secretary containing the date such termination is to become effective. A Member terminating participation in the Enterprise shall bear the settlement costs, if any, applicable to Work-Engagement Plans or Principal/Agent Plans containing as a party the Member terminating participation in the Enterprise.

4. *For the Plenary Conference and Committees*:

Upon decision of the Enterprise Council, these Articles of Joint Enterprise shall enter into force for the next Plenary Conference on the date such declaration is communicated by mail to all Members of the Enterprise eligible to attend the Plenary Conference. Unless terminated by either or both Permanent Co-adventurers herein, these Articles shall continue to govern the actions of future Plenary Conferences, when in session, and all Committees of Correspondence organized thereunder.

Article 32
Changes and Modifications[156]

1. With due regard for the recommendations of the Plenary Conference as well as the expertise offered by Committees of Correspondence, but without them if warranted by circumstances, the Enterprise Council may change or modify any, or all, provisions contained in these Articles including the Regulations annexed hereto; *Provided* that no such change or modification shall be deemed as affecting, or impairing, rights and obligations secured under Work-Engagement Plans or Principal/Agent Plans in effect prior to the change or modification.

2. The General Secretary of the Enterprise shall establish procedures for promptly notifying the Members of the Enterprise of changes or modifications to the Articles and Regulations.

---

156. NASA, as one of two Permanent Co-adventurers signing the Enterprise Agreement and as one of two members of the Enterprise Council, cannot, as a matter of federal law, be bound by the recommendations of the Plenary Conference or committees, but may, of course, consider their recommendations. A Plenary Conference also existed under the Consortium Agreement and worked quite well for the only time it met. *See supra* note 124.

Article 33
Execution

On ————————, the principal representatives of the Permanent Co-adventurers, whose subscriptions appear below, signed this Instrument, in duplicate originals.

For the University Co-adventurer	For the Government Co-adventurer
_____	_____